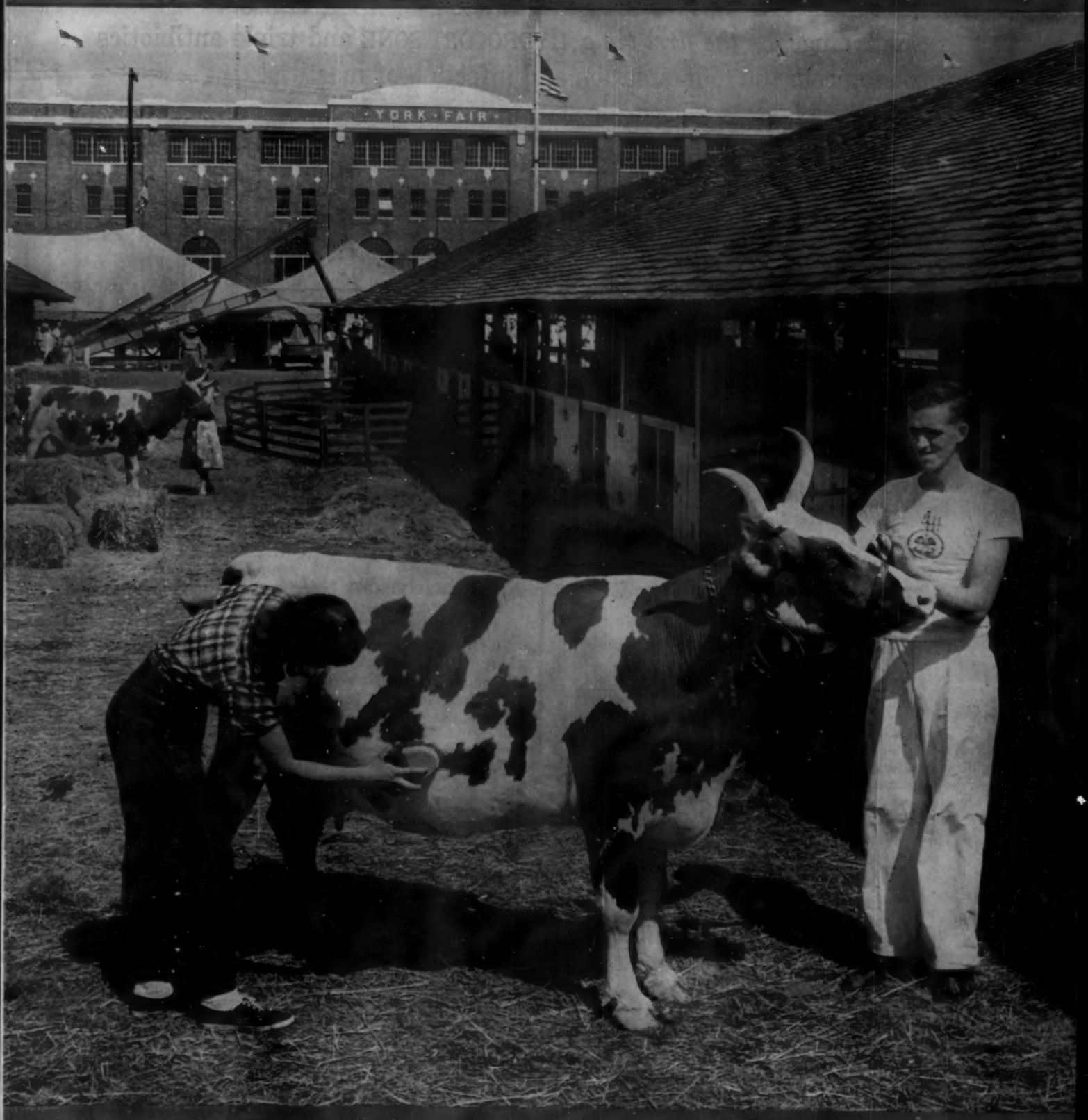
HOARD'S DAIRYMAN

AUGUST 10, 1956



THE NATIONAL DAIRY FARM MAGAZINE

new principle termed **greatest advance in mastitis treatment in nine years!**

new Teatube*-CORBIOT*

Combining, *for the first time,* HYDROCORTISONE and triple antibiotics to stop *both* the inflammation and infection of mastitis!

In CORBIOT, the powerful inflammation-relieving action of hydrocortisone is combined with the well-proved germ-killing action of *3* antibiotics. This is the first time such a combination has been made available to the nation's dairy farmers. Forty-four scientific investigators in agricultural colleges, veterinary schools, and on farms have worked with CORBIOT for more than a year and a half, thoroughly testing and proving its effectiveness.

CORBIOT is the *only* mastitis product which has *both* hydrocortisone to control the inflammation and antibiotics to control the infection. Together, they add up to *the only remedy designed for total treatment* — to help save the udder for continued full production.

In tests at a leading university, *one dose* was sufficient to clear up streptococcic mastitis in 82% of the cases. GET A SUPPLY OF TEATUBE-CORBIOT FROM YOUR DRUGGIST OR VETERINARIAN.

HOW CORBIOT PRESERVES MILK-PRODUCING CAPACITY

Each quarter of the cow's udder contains thousands and thousands of tiny milk-producing glands called *alveoli,*

which are connected to each other by openings and ducts.

The alveoli are generously supplied with blood through small blood vessels running in the loose tissue between the alveoli.

Milk is made from the ingredients brought to each alveolus by this blood supply.

In mastitis, germ infection in the alveolus is almost always associated with *inflammation* of the tissue between these small glands. If this inflammation is not promptly checked, it may lead to scarring of the tissue, which blocks the blood supply, and in this way permanently reduces the milk-producing power of the infected udder.

HYDROCORTISONE is the most powerful of the natural steroid hormones against inflammation. Each Teatube-CORBIOT contains a full 20 mg. of hydrocortisone acetate. The carefully designed combination of 3 potent antibiotics (PENICILLIN, NEOMYCIN, and POLYMYXIN) gives assurance of effective attack against *all* of the germs commonly associated with mastitis.

no other mastitis product on the market contains hydrocortisone to preserve the milk-producing capacity of the udder!

Teatube*-CORBIOT*

Available in 10 Gm. tubes

*TRADEMARK, REG. U. S. PAT. OFF.

Your veterinarian is your first line of defense against animal diseases. Consult him in regard to your animal health problems.

a product of **Upjohn** research

VETERINARY SALES DEPARTMENT, THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

"American Fence is the practical way to solve the farm fencing problem

... it's long-lived and gives a farmer his money's worth in material and labor costs,"

SAYS FRED R. JONES, CONCORD, MASSACHUSETTS

Mr. Fred R. Jones—President of The Farm Bureau Association of Waltham, Mass., President of the local National Farm Loan Assn., and member of the State Board of Directors of the Massachusetts Farm Bureau Federation.

Mr. Jones uses four or five 20-rod rolls of American Fence every year, which is actually new fencing, not replacement fence. He mounts his fence on American Self-Fastening "U" Posts.

Herd replacements are produced at "Old Acres" through artificial insemination. About a dozen calves a year are kept, and the American Fence does a good job of containing the frisky little animals.

Mr. Jones is the prominent owner of two handsome farms near Concord—"Old Acres" farm which has 110 acres, and "Old Acres Sudbury" consisting of 90 acres. Mr. Jones has full dairy facilities at "Old Acres" and processes and bottles 1400 quarts of milk every day—serving customers in both Concord and Acton, Massachusetts. He also raises enough poultry to supply his customers with eggs.

"Old Acres" supports a mixed herd of pure Holsteins and Holstein-Guernseys, which has a herd average (per cow) of 350 pounds of butterfat annually, and 9,000 pounds of milk annually. The cows are fed on a mixture of clover and alfalfa raised on the farm.

Mr. Jones uses American Fence to keep his cows out of the ensilage corn (about 12 acres) and from wandering off the farm. "There are many advantages to American Fence and Steel Posts," he says, "no postholes to dig, nothing to paint, easy to put up, easy to take down. Best of all, American Fence is long-lived. I've used American Fence on my farms since the very beginning. Some sections have been up for more than 20 years." At present, Mr. Jones has more than 4 miles of American Fence on his farms, supported by steel posts spaced 10 to 12 feet apart.

Progressive farmers, like Mr. Jones, consider permanent and temporary fencing a most important farm tool, since it makes possible complete pasture rotation and rotation grazing, plus giving animals and crops the vital protection they need to grow and prosper. These men have learned through long experience that products bearing the "American" brand give years and years of good, economical service in all kinds of weather and under rough treatment. See your American Fence Dealer.

"There's more in use than any other brand"

USS

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Rockefeller Building, Cleveland 13, Ohio

Please send me your FREE booklet—
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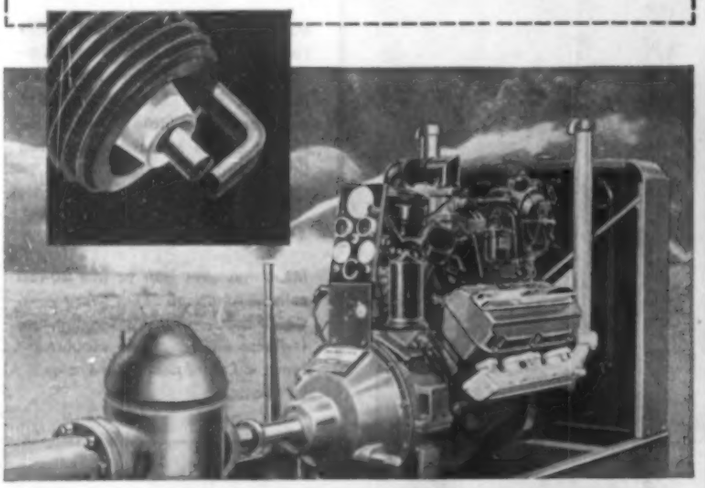
Address ..... Town.....

County ..... State.....

AUTO-LITE TIPS
ON FARM ENGINE MAINTENANCE

High-tension ignition wires can be a source of hard starting and uneven running. Examine the wires running from spark plugs to distributor and from distributor to coil for cracks and other signs of deterioration. Best possible check is to start engine on a damp night and look for high tension electrical leaks. You may be surprised. Worn out spark plugs will contribute to ignition wire leaks. So when you check wires, check plugs, too.

In recent years there have been many advancements in ignition wire insulation. Auto-Lite "Neosheath" Spark Plug Wire, for example, resists oil, heat, salt water, and abrasion. We suggest that you use it when replacing high-tension wires.

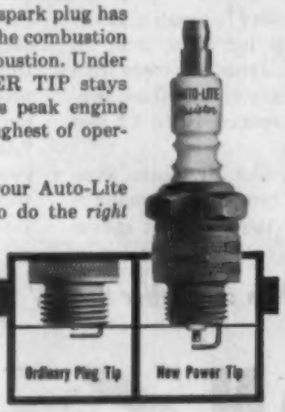


There's An Auto-Lite Spark Plug For Every Farm Use!

Whether it's a heavy-duty irrigation pump or a small power mower engine, there's an Auto-Lite Spark Plug ignition-engineered for the job.

The Chrysler-powered irrigation pump shown here, for example, uses Auto-Lite Resistor Spark Plug with POWER TIP—a spark plug designed especially for modern overhead-valve, V-8, high-compression engines. This new spark plug has a protruding tip that reaches down into the combustion chamber to get closer to the heart of combustion. Under heavy irrigation pumping loads, POWER TIP stays cool to check pre-ignition. The result is peak engine performance and economy under the toughest of operating conditions!

Whatever your farm spark plug need, your Auto-Lite Spark Plug Dealer has the *right* plug to do the *right* kind of a job for you.



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POWER TIP

Auto-Lite manufactures over 400 products, including Spark Plugs, Batteries, Wire and Cable, and Automotive Electrical Systems . . . sold throughout the United States and Canada.

HOARD'S DAIRYMAN
The National Dairy Farm Magazine

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COVER PICTURE

Once again it's the season for shows and fairs, large and small. Thousands of dairy cattle breeders, 4-H, and F.F.A. members will be leading out the best they have before the critical eye of judges everywhere. For a rather humorous analysis of what shows might be, we suggest you read Ben Brown's title page feature, "If cows could only trot", on page 753.

This Grant Heilman photograph was taken at the York, Pennsylvania Fair. The Ayrshire cow, Rocky Springs Pilot, was grand champion cow. Held by John Shank, a member of the William Shank and Sons partnership, Hagerstown, Md., the cow is being brushed by Doris Troobnick, of Burke, Va., who was showing goats at the York Fair.

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be **received by the 1st of that month.**

Washington Dairygrams

IOWA STATE COLLEGE APPROVED FOR LOCATION OF NEW ANIMAL DISEASE LABORATORY BY SECRETARY OF AGRICULTURE, SUBJECT TO COMPLETION OF SATISFACTORY ARRANGEMENTS LOCALLY. WILL PROVIDE FOR SIMULTANEOUS RESEARCH ON 25 DISEASES.

CROP PRODUCTON PROSPECTS ARE CONSIDERABLY BELOW LAST YEAR'S NEAR-RECORD. WINTER WHEAT UP 5 PER CENT; CORN SAME AS LAST YEAR; OATS DOWN; HAY DOWN 5 PER CENT; SOYBEANS WILL REACH NEW PEAK, 11 PER CENT ABOVE LAST YEAR'S RECORD.

TOTAL INVESTMENT IN C.C.C. PRICE SUPPORT PROGRAM $8.5 BILLION COMPARED TO $7.2 BILLION YEAR AGO. MAJOR INVENTORY ITEMS: 990 MILLION BUSHELS WHEAT, 720 MILLION BUSHELS CORN, 6.8 MILLION BALES COTTON, 276.5 MILLION POUNDS CHEESE, 217.9 MILLION POUNDS DRIED MILK, 57.7 MILLION POUNDS BUTTER, 116 MILLION POUNDS WOOL.

MILK PRODUCTION DURING JUNE 12,656 MILLION POUNDS, HIGHEST FOR MONTH SINCE 1945 AND 1 PER CENT INCREASE OVER YEAR AGO. FIRST HALF OF 1956 TOTAL NEARLY 67.4 BILLION POUNDS COMPARED TO 65 BILLION FOR FIRST SIX MONTHS LAST YEAR.

HOUSE PASSES POSTAL RATE BILL, NOW IN SENATE, INCREASING FIRST CLASS MAIL TO 4 CENTS, AIR MAIL TO 7 CENTS. SECOND CLASS MAIL IN FIVE ANNUAL INCREMENTS WILL TOTAL 30 PER CENT INCREASE ON READING PORTION AND 120 PER CENT INCREASE ON ADVERTISING (NO INCREASE FOR PUBLICATIONS OF NONPROFIT RELIGIOUS, EDUCATIONAL, AGRICULTURAL, LABOR, ETC., ORGANIZATIONS). FINAL ACTION BEFORE ADJOURNMENT DOUBTFUL.

★ ★ ★

In YOUR next issue!

LET'S STUDY THE RECORD . . . To find out how some dairy farmers make as much profit from 16 cows as others make with 50, you will want to read this interesting analysis of Missouri's D.H.I.A. records.

HOW TO SAVE TRACTOR FUEL . . . You will be amazed at the number of simple things you can do to save on tractor operating costs. This is another in our outstanding tractor series.

SILO UNLOADERS ARE REPLACING PITCHFORKS . . . In an effort to present information on another labor-saving device on dairy farms, this artice describes the various types of unloaders as well as approximate operating costs.

KEEP YOUR SOIL LOOSE . . . The author outlines five management practices that will help prevent soil compaction, a condition that is now recognized as serious in many areas.

AND MANY MORE . . .

Easy TO ORDER OR RENEW!

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Fort Atkinson, Wisconsin

☐ New
☐ Renewal

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Pasturgro is a new kind of plant food. An exclusive Swift process—called FLO-FUSION—packs each particle with fertility . . . assures a balanced diet for every square foot of pasture. **Pasturgro** contains extra growth elements which are needed by grass and legumes to make strong, deep-rooted growth.

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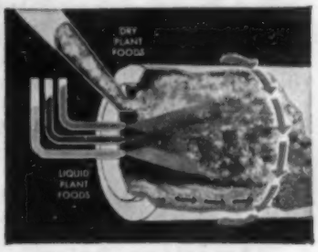
High-quality liquid plant foods are injected into dry materials in a revolving FLO-FUSION processing chamber at Swift's Plants. Millions of individual chemical reactions convert raw materials into chemically-hitched plant food, drying the particles as they are formed. You get the benefit of this FLO-FUSION process only at Swift Plants throughout the nation.



Swift 101ST YEAR

To Serve Your Farm and Family Better

Memo to Dairy Farmers

You can win up to $30,000 from Pillsbury Mills for your favorite recipe using real butter!

* * *

Pillsbury's famous Grand National Bake-Off Contest offers a special **butter** prize this year. It's an **extra** award of $5,000 for the best butter recipe sent in by a dairy farmer family participating in the American Dairy Association set aside. Two ingredients in the recipe must be **real butter** and Pillsbury's Best Flour.

* * *

This prize is in addition to any other award the butter recipe might win in the main competition, so — (if it receives the Grand National award, too, the blue-ribbon butter cook could walk off with $25,000 more, or a total of $30,000).

* * *

The recipe can be a simple one you've just invented, *or* one that has been in the family for years. It needn't be fancy or elaborate. One year a homemaker won $25,000 just for putting sesame seeds in her pie crust.

* * *

If your family participates in the American Dairy Association set aside, set your cap for this special $5,000 award. Remember, real butter and Pillsbury's Best Flour are your recipe needs. And your recipe may be good enough to win up to $25,000 more.

* * *

Official Pillsbury 8th Grand National entry blanks are available three ways: 1) on tear-off pads at your food store, 2) in all specially marked Pillsbury's Best 5 and 10 lb. flour sacks, and 3) by writing to Ann Pillsbury, box 211, Minneapolis 2, Minnesota.

* * *

Get your entry blank and enter your best butter recipe today. Contest closes October 1.

Your Road to Sales

American Dairy Association

20 North Wacker Drive

Chicago 6, Illinois

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Develops "hay burner" cows

Your most efficient cow is the "old hay burner." In reference to your editorial "Let's breed an efficient cow", we feel it is possible to breed a "roughage" cow.

During the past 12 years we have developed an efficient herd to fit our roughage feeding program. Our feeding program is composed of good-quality hay, corn silage, and 30 pounds of brewers' wet malt, a cheap, low-protein grain. We do not feed any other grain or oil meal, nor do we pasture or feed green chopped grass.

Our D.H.I.A. herd average has been between 350 and 422 pounds of butterfat the last 8 years under this feeding program. Although the herd's butterfat average is not high, it is, nevertheless, an efficient herd. Our 1955 Illinois Farm Management records show that for $100 of feed fed we had a return of $254, which was the most efficient herd in our district.

We firmly believe it is possible to breed a "roughage" cow and that this characteristic is inherited. We have several cow families that consistently produce over 400 pounds of butterfat with a diet of hay, silage, and 30 pounds of brewers' wet malt. One particular cow from a hay burner family made 1,400 pounds of butterfat total in her first 3 lactations and her sister has 930 pounds of fat in her first 2 lactations.

By careful breeding of these families, our lowest first-calf heifer in the last 2 years was 330 pounds. By crossbreeding our families we are developing a herd that can produce a respectable quantity of milk with minimum grain.

We are very much interested in breeding efficient, roughage cows and hope to see more articles on this subject. Your paper is the best farm magazine we get, and we appreciate the job you are doing for us.

Illinois — MARTIN C. MEYER

Use domestic quotas

As I see it, there are three choices which the farmer has:

1. Stay disorganized and take what we always got in the past.
2. Let the government regulate everything and have complete dictatorial powers.
3. Organize and do our own regulating.

We have our cooperative organizations, but they are not going far enough. There is too much spread between the producer and the consumer. If all our dairy products were handled through Land O'-Lakes, we could control the price.

If the Farm Bureau and the Grange would only get together and organize the farmers, we could do something. Take a leaf from labor's book; we all know what organization has done for them.

Let each farm raise what it pleases but have a quota on what they can sell, based on average past production for domestic consumption, at a price that will give a good living and a few dollars to put by for a rainy day. We will always have a good reserve to fall back on for any emergency.

Let those who have raised in excess of quota supply any export demand at world price or whatever it will bring.

Minnesota — A SUBSCRIBER

Could outgain labor

Ever since the price squeeze hit the farmer, there has been meeting after meeting across the country with arguments, demands, suggestions, and advice, trying to find an answer to problems but with little or no results. Now, if these meetings would have been held for the purpose of organizing, they would have had the answer.

Everyone can plainly see the result of organized labor. Farmers could have the same result. They have the same right, and could even be in a stronger position, being as they raise the food that feeds the world. What more power could they want than by holding their produce to bring the price up, make a fair profit, and be at par with the rest of the economy. The unions have made a success, and so could the farmers.

Washington — V. B.

Big farms will fold

People should stay with the family farm. Large farms will pay the hard way, the price the dictators of unionism demand. In time, they will fold up as big farms and be subdivided into little farms.

California — CLARENCE W. FARMER

Like a "small stick"

I think that direct payments to farmers and a limit of $2,000 or $3,000 to any one farmer would probably be the simplest farm program. A low limit would force the large producers to cut production and would soon cut payments.

The large producer could take advantage of the soil bank plan. I don't think that the average farmer will get any short-range benefit from the soil bank plan.

The best long-range program for farmers is for them to get organized. Every farmer should get into some union. A farmer alone is like a small stick. He can be easily broken. If he ties himself in with other sticks, he will be much stronger. Then all the unions will have to tie themselves together to work for the common good of farmers everywhere. So, let's all of us average fellows get together and get average fellows to lead us.

Wisconsin — THEODORE MCINTYRE

"A guy can get lots of money wrapped up in a herd."

Too many "gripers"

When I read the June 10 Hoard's Dairyman with so many "gripey" letters I felt like blowing my top. What is happening to the farmers?

To begin with, Leonard Nyberg was griping about the milk handlers "using his money for 50 days," etc. (Maybe the handlers in that area are different. We're under a federal marketing order and our handlers pay us two "advance" checks and one settlement check each month. In reality, our handlers only hold back 15 days. This compares favorably with other types of business in this area.)

Then I see G. J. Page thinks striking is the answer for higher prices. He should sit down and figure what he terms "a good long strike" would cost him and how long it would take him to make it up, even with a substantial raise.

A. J. Rosenstein wants prices which are equivalent to a minimum wage. He says, "The prices developed should apply to a reasonably efficient farmer, so that the marginal and submarginal farmers might get only 70 to 80 cents per hour, while the real efficient farmers earn $1.40 to $1.50 per hour." If he wants a job for 70 cents to $1.50, according to his efficiency, come on down; we'll give him one.

Then I see W. E. Casbohm just can't "see" a trench silo; his experience was too expensive, etc. My husband, alone, without any help, put 75 tons of silage in a pit silo. He cut, hauled, dumped, and packed it in less than a week between milkings. His spoilage, too, was about 10 per cent, but he came out on it.

Last, but not least, I see Clifford Davis has the idea that anyone with a little ambition to get ahead is a "greedy, hoggish man." On this score I must set him straight. My husband is anything but a "greedy, hoggish man," but last year in addition to putting up the silage referred to in the previous paragraph, he baled about 5,000 bales of hay (with labor bill of less than $100) and produced 251,031 pounds of milk — alone.

Mr. Davis says we already have "too much government," yet in his next paragraph he wants the government to pass a law limiting the size of farms. This would only make the government bigger.

Our government was founded on freedom of enterprise, and farmers (with all the controls we have) still have more freedom than most businesses. We should all try as much as we can to do our part to keep it that way. Dairy farming has its ups and downs, but I guess we love it. If we didn't, we'd try working for someone else.

Texas — MRS. E. G. D.

Wants every issue

I surely have enjoyed your Hoard's Dairyman for the past five years. I hope I am renewing it in time so I will not miss a copy.

I have received some very helpful information from it, and I think it is one of the best farm magazines for the money.

Maryland — GRANT THOMAS

"Farmhand proves mechanical feeding saves money!"

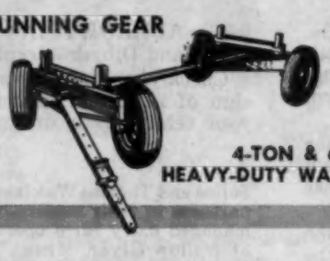
Only Farmhand offers a complete line of modern, field-tested feeders to fit every farm

SAVINGS OF UP TO 50% in time and labor costs are possible with a Farmhand Feeder. That's one reason farmers everywhere are building their entire feeding programs around these big, dependable machines. They're the best-engineered, the best-constructed; and there's a model to fit any feeding program—large or small!

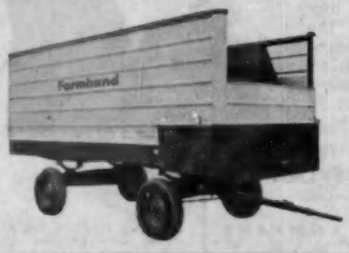
ONE MAN DOES THE JOB—From start to finish, there's no need for extra help or hard labor—your feeding costs go down, and stay down. The Farmhand Feeder handles big loads, mixes and blends to insure a balanced ration, unloads mechanically as it moves along. And it converts to Spreader, Forage Unit or All-Purpose Box.

FARMHAND RUNNING GEAR

6-TON TANDEM TRAILER



4-TON & 6-TON HEAVY-DUTY WAGONS



"SUPERIOR" FEED WAGON—Built for fast, big-tonnage feeding. Over 520 cu. ft. capacity. Steel frame, aluminum exterior, treated plywood lining and floor for greater durability with less weight. 4-chain conveyor, 24" discharge belt. 3 steel mixing beaters. Adjustable unloading speed.

FARMHAND 6-TON "POWER-BOX" with 2-beater 18" belt-discharge Feeder attachment for green or dry feeds. Unloads by PTO-power in 1 to 4 minutes. Mounts for front or rear discharge on truck, Heavy-Duty Wagon or Tandem Trailer.

16" AUGER-TYPE FEEDER on the Farmhand 6-Ton "Power-Box" is especially suited for beet pulp and other wet or high molasses-content feeds. Handles big, 300-bu. loads. PTO-powered, full-width, double-chain floor conveyor.

FARMHAND 4-TON "POWER-BOX" with auger-type discharge elevator. Hauls, mixes and unloads big 135-bu. loads. Adjustable discharge rate. Heavy-duty frame; treated marine plywood sides and bottom. Front or rear discharge.

FEED-HAND by FARMHAND—a V-bottom unit with 6" conveyor auger and 9" unloading auger. Has 75-bu. capacity; 100-bu. with optional extension sides. Spout swivels 360°, unloads in 2 minutes or more. Heavy-duty frame and running gear.

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"Our Veterinarian suggested we use TARGOT® for Mastitis..."

MASTITIS OINTMENT

Reports **JULIUS WALETZKO,** PARTNER
WALETZKO DAIRY FARM, WILLOW RIVER, MINN.

"Our veterinarian suggested we use TARGOT for mastitis. We tried it and it worked with complete success in one application. Since then our vet has been more welcome here than ever before and TARGOT has become a staple in our farm medicine cabinet.

"Not only has TARGOT worked faster than any other preparation we have used but it also seems to slow down the recurrence of mastitis. We have fewer cases and less often than ever before.

"A cow with mastitis is a complete loss as far as income is concerned. Therefore, the quicker mastitis is checked the sooner our income is returned to normal. We've found that one application of TARGOT will often clear up a case of mastitis."

TARGOT is stronger — but gentle. It contains not one or two but *four* powerful antibiotics to do a fast, thorough job — AUREOMYCIN® Chlortetracycline, Penicillin, Neomycin and Dihydrostreptomycin.

Check your strip cup at *every* milking — and at the first sign of abnormal milk infuse TARGOT. Available from your veterinarian, druggist or feed dealer.

Julius and Thomas Waletzko are partners in their modern, well-managed dairy farm operation at Willow River, Minn. They farm 640 acres, maintain the barn and milk house in immaculate condition and employ approved herd management practices with their herd of 35 high-producing cows.

Always ask for TARGOT by name... *Stronger but gentle*

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HOARD'S DAIRYMAN
Founded in 1885.

If cows could only trot . . .

. . . there might be a ringside of 12,000 instead of the usual 250. But cows are not bred to trot and benefits are still derived without a mob.

by Ben Brown

THERE is an old story about a man who brought his harp to a wedding but nobody asked him to play. In some respects, to the casual observer, the same sense of frustration exists in the showing of dairy cattle at major fairs and expositions.

Certainly, the work, time, and money (sometimes referred to as the big fret) that go into selecting, preparing, and transporting animals to a major show exceed by a wide margin the struggle one might have in bringing a harp to a wedding. Yet, frequently the ringside numbers less than the frantic army of owners, handlers, showmen, officialdom, and hands.

Sometimes it seems that it was a grand party but nobody came.

Now, of course, one cannot say that "nobody" was in attendance. Ringsides are generally made up of persons important. Officials, authorities, buyers, and those who teach are well-represented. Present also in strength are leading breeders, people who are in a position to do something about improvement of cattle.

The show ring provides a means of measuring progress, setting standards of type, and finding a way to better things. But, from the standpoint of a "show" in the literal sense of the word, perhaps never in history have so many done so much for so few.

A constant and disturbing comparison is found in the showing of thin horses. Thin horses, hitched to expensive and shiny little carts or ridden by thin, young ladies, prove fascinating to thousands. People pay "good" money for box seats to gather en masse to watch thin horses.

There are a lot of people who would rather go to a thin horse exhibition than to church. Most of these people do not know a pastern from a wither. Nevertheless, they consider the spectacle of thin horses clopping madly around a flower-bedecked arena "a thing of beauty and a joy forever."

Now, there is nothing really wrong about all this. True, the horse in general, and the thin horse in particular, possesses perhaps the least usefulness per pound of any animal on earth, being nearly worthless as a means of transportation, highly uncomfortable as a source of entertainment, and illegal as meat. Still, while lacking positive merit, the thin horse is not an evil thing. Properly controlled, he does no harm.

However, it is sad at times to think of the inequities entailed in a comparison of crowds at cow and at thin horse shows. On the one hand, we have the thin horse, a drug on society and a beast whose claim to fame as a servant of mankind has long since ceased to be.

And, on the other, the cow, foster mother of the world, maker of the most perfect human food, the most important part of the biggest and most important business in the world. When her working days are past, she gives of her best, serving as meat for our tables and providing the leather which holds up our pants.

Yet, when the two animals are displayed in the same arena on the same day, 12,000

people pay $1.60 plus tax to cheer the horse, while only 250 people walk through an open gate to see the cow. And many of those who "see" the cow are there not to see her but to rest.

If showing dairy cattle has as its ultimate purpose the drawing of a crowd and the exhibition of man's leading domestic animal to the public, any realist must admit that dairy cattle showing is a colossal flop — a fiasco. No amount of rationalizing can alter the facts. Under our present setup, per dollar invested, you could draw a bigger crowd by putting on a marble tournament.

Therefore, we must admit either of two things:

First, if drawing a crowd is the real reason for showing, the time has long since come and gone when, by any logical standard, we should have quit and gone home.

Second, if drawing a crowd is not the real aim of showing, then the real goal should be emphasized more strongly in order that we may determine if we have been successful in attaining it.

Obviously, most people in the cattle showing business lean toward the thinking that drawing a crowd is not our aim. But, too many people think it is and, not being altogether foolish, have drawn the only logical conclusion: That we are beating our heads against a wall, unwilling to admit that we have failed.

In sympathy, some of them have offered suggestions as to how we might attain a crowd. It does not take a P. T. Barnum to see that 30 or 40 expertly-groomed cows, moving slowly and quietly in orderly confusion for an hour or so, do not exactly make a show stopper. What could possibly be more boresome?

Obviously, something is going on. But the judge never appears in tights and, unless you know him or know what a judge ought to look like, this star of the performance looks just like everybody else. He is just another guy in a business suit looking at the cows.

Nothing happens! The visitor sits for an hour trying to figure out what "they" are going to do. Then some more guys in business suits write in their books, hand some blue and red things to the people holding the cows, and then the cows all waddle slowly back to the barn.

Ten minutes later (during which time nothing at all happens) another bunch of cows plod in and the second act opens just like the first.

We have heard suggestions:

- get the cows to trot;
- put flowers in the ring;
- get a pretty girl to hand out ribbons;
- ring a bell or something;
- put a red-blue-and-white suit on the judge;

(Turn to page 764)

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

FARM LIFTING MADE EASIER

Correct hand lifting on the farm should be practiced until it becomes a habit. It is reported that on the average 25-cow farm, a farmer lifts 500 tons at least once a year. Too many farm folks are victims of strains, sprains, hernias, and other injuries.

Your body is a mechanical system of levers and hinges, activated by a cable, just like machines. When overloaded or used improperly, injuries are invited.

Many people unconsciously bend at the waist when they reach down to pick up an object. Lifting in this position places a severe strain on the sensitive back and abdominal muscles.

On the other hand, if you will squat and bend your knees and keep your back as straight and upright as you can when you,

lift a heavy object, the powerful muscles of your legs and thighs can do the lifting without excessive strain.

According to the Rural Safety Council, the most common causes of injuries are:

1. Lifting and lowering with the back muscles instead of the leg muscles.
2. Insecure grip or footing and unsafe placing of hands or feet.
3. Using quick, jerking, twisting, or awkward body movements.
4. Obstructed vision, unstable loads, or inadequate control.
5. Insufficient help or failure to use mechanical aids.

CONTROL FARM POND ALGAE

To remove algae on farm ponds, two treatments are recommended.

Bluestone-lime (copper sulphate) is an old standby. The second is sodium arsenite. Bluestone-lime is applied whole in pond waters, while sodium arsenite is sprayed on infected areas. Neither will kill fish if applied in the recommended proportions. Dr. James Herron, Kentucky botanist, says that while green algae are not poisonous, they are objectionable looking, sometimes produce bad odors, and may clog irrigation equipment.

When using bluestone-lime, eight pounds of material is recommended for each million gallons of water. This should be placed in a sack and dragged through the water, or smaller amounts put in separate bags to be dropped into the pond. The treatment should be repeated three to five times a season.

Sodium arsenite is used as a spray, at the rate of four to six parts per million parts of water. One or two treatments in May or June usually give control during the season.

When sodium arsenite is used, livestock should be kept away from the pond about one week, or until there has been a good rain. Frequently, concentrated amounts are spilled around the pond edge. Livestock could be injured by swallowing such concentrates.

Since sodium arsenite has not proved as effective in tests when applied later in the algae growing season, bluestone-lime is recommended for any treatment after July 1.

If the pond is heavily infested, treatment should be applied to only parts of the area at one time. If a heavily-infested pond is treated over the entire surface, the decaying algae will absorb too much oxygen from the water and fish will suffocate. When the algae are killed by treatment, they sink to the bottom of the pond.

REMOVE ODOR FROM CISTERN

You can make cistern water usable for everything but drinking by using a dosage of chlorinated lime or bleaching powder.

The bleach will have a strong smell for a day or so, but it will go away and leave your cistern free from harmful germs and odors.

A University of Illinois engineer says it is possible to help keep disagreeable smells from developing in a cistern by cleaning it out thoroughly and then installing a filter and a rain switch. The switch allows the rain to wash the roof dirt away before it turns the run-off water into the cistern.

Despite all your precautions, you cannot keep all leaves and insects, or even a mouse once in awhile, from getting in and causing musty odors. Then you can use the lime or bleach. This chemical treatment is especially useful in dry weather, when a low supply of water might make you hesitate to drain it away to clean the cistern.

WATCH FOR SUDAN POISONING

Watch out for cyanide or prussic acid poisoning when you start to pasture Sudan.

Young Sudan plants, those of stunted growth or second growth, are most dangerous. Since the hydrocyanic acid that causes poisoning disappears as plants mature, you will probably have no trouble if you let Sudan grass grow at least 18 inches high before turning cattle in.

Cattle and sheep that have been poisoned by cyanide show symptoms of drowsiness, stagger, breathe hard, and have difficulty standing. If they have eaten a good dose, they may die within a few minutes. Most cases are fatal, but if the animal withstands the immediate action of the cyanide, the acute symptoms subside and the animal will recover within a few hours.

When you see the first symptoms, call a veterinarian immediately. Drive all animals able to walk from the field. Treatment with an intravenous injection of such materials as sodium nitrite or sodium thiosulfate will counteract the action of the hydrocyanic acid.

It is a good idea to plow Sudan pastures right after the animals have eaten the grass from them to try to prevent regrowth that can be a source of cyanide poisoning.

Making Sudan grass into hay or silage usually makes it safe for cattle and sheep.

ANIMAL CARRIERS SPREAD ERYSIPELAS

The best control for erysipelas, one of the most serious swine diseases, is to isolate and vaccinate.

Newly-purchased hogs should be put in a pen by themselves for the first three weeks and watched closely for any signs of disease.

Since erysipelas is often spread by carriers (animals that appear healthy), buy feeders and boars from known disease-free sources.

Where erysipelas has occurred previously, C. W. Burch, Wisconsin veterinary scientist, recommends vaccinating gilts and sows with serum and culture before breeding. Then vaccinate little pigs at 6 to 8 weeks of age. The local veterinarian must get a permit before using the serum and culture.

If the disease has already attacked your hogs, you can get some help from anti-serum injection if it is done soon enough.

Symptoms of acute erysipelas are very similar to hog cholera. There is a sudden loss of appetite, a fever of 104 to 108 degrees, and the pigs often die within a few hours.

In the sub-acute form, infected hogs will have swollen joints and become generally unthrifty. Diamond skin disease is the mildest form of erysipelas. The skin may be raised in welts, sometimes in a diamond pattern. Patches may dry up and slough off.

Disease organisms causing erysipelas can stay in the ground for years, so move the herd to clean ground and pasture after an infection. Work infected soil often, so sun and air can help get rid of the organisms.

HIGH-POWERED FEED FOR HENS

A University of Wisconsin poultry specialist says home-mixed laying rations may not meet the needs of modern hens.

Barry Hayes states that present-day hens, thanks to better breeding, can lay 10 per cent more eggs annually than once was possible. That kind of production takes a "high-octane" feed.

He recommends a ration that contains soybean oil meal, steamed bone meal or rock phosphate, fish oil, and manganese sulfate.

An easy way to get these ingredients is in a ready-made concentrate. Then feed it with home-grown corn and oats in the amount recommended by the manufacturer.

A home-mixed mash containing equal amounts of ground corn, oats, wheat bran, middlings, and meat scraps has been used in the past with good results for birds that would average about 160 eggs a year.

Today, good laying hens should lay 200 eggs annually. The best way to get that kind of production is with an efficient feed.

When cows are on pasture...

Should we feed hay or silage?

The answer depends on the quality of the pasture. On excellent pasture, research reveals it does not pay to feed other roughages.

by D. W. Seath

IF WE can get lots of top-quality roughage into our cows, we can usually save on our feed bill. Many dairymen have been feeding hay or silage when their cows are on pasture. This has been particularly true during late summer and early fall when pastures are short.

Even when they are grazing good pasture, cows will eat quite a bit of hay and silage. We have all seen this personally and it has been demonstrated by many experiments. A cow seldom will consume less than 5 pounds of hay per day. Some will eat as much as 10 pounds, even though the pasture is of excellent quality.

As we watch the herd eat away at a bunker of hay, we are inclined to conclude that feeding hay is a profitable practice. In addition, of course, we like it because it does provide some insurance against bloat when the cows are on legume pasture.

Recent research work has shed some light on this summer hay and silage feeding. It has also cast some doubt as to whether the practice is profitable under all conditions.

COWS WILL EAT LOTS OF HAY, if available, but in so doing they will graze less pasture.

More grazing at night . . .

The author first became interested in this problem when engaged in research at the Louisiana Agricultural Experiment Station. During hot weather we found the cows did most of their grazing at night. They averaged from 6.2 to 6.5 hours of night grazing, which was more than 3 times the amount of time spent grazing during the daytime.

Our first observations in Louisiana, then, indicated that most of the day our cows were spending their time in the shade. This seemed to support the argument that we should feed cows hay during the daytime so they would increase their roughage consumption.

In a preliminary trial conducted in 1940, we fed milk cows 9 pounds of white Dutch clover hay per cow daily. The increases in milk production were insignificant.

In the second experiment the cows were limited to 0.5 per cent of their body weight daily for one group. In another group they were fed all the hay they could clean up. Hay consumption averaged 4.7 pounds daily for the first group and 5 pounds for the second. In this trial milk flow was maintained at a slightly higher level when the hay was fed. Even so, neither system of feeding hay was profitable under our conditions.

A third trial was conducted by the author and his co-workers at the Kentucky station in 1948. There, during July and August, we fed Holstein and Jersey cows on pasture all the alfalfa hay they could consume. Once again, we found no significant increase in milk flow or changes in body weight.

In 1950, another Kentucky trial was conducted over a 42-day period. Either corn silage was fed as a supplement or an extra amount of grain was given Jersey and Holstein milk cows on pasture from August 1 to September 11. In this trial both supplements tended to prevent a small portion of the slump in milk production. In neither case, however, was the feeding of the supplement profitable. In other words, the additional milk produced did not pay for the silage fed nor the extra amount of grain.

The following year we conducted another trial over a 56-day test period. The experiment was essentially the same as for the previous year. Again, the feeding of silage or the extra amount of grain decreased slightly the amount of slump in milk flow. Here again, however, the difference was not statistically significant and there was no significant change in body weight.

Four years ago we went at this problem again and secured some new evidence. We found that we did get some improvement in milk production when we fed silage to cows grazing a mixture of Kentucky 31 fescue and Ladino clover. We also got an increased milk flow when we increased the amount of grain fed to cows grazing a pasture of straight Kentucky 31 fescue. Apparently, then, it did pay to feed extra roughage when the pasture was low in its milk-stimulating effect.

Two years ago we used a new technique in studying the effect of grazing pasture and feeding supplements. This technique permitted us to measure the amount of dry matter actually secured from pasture. It is known as a combination of the chromogen and chromic oxide techniques. With it we were able to conduct a more comprehensive experiment.

Our cows grazed Kentucky bluegrass-white clover pasture during 13 weeks of one of Kentucky's driest summers. Half of the cows were allowed to eat all of the alfalfa hay they would clean up during two 2-hour periods daily. The other group had only the usual amount of grain as fed to all animals in the experiment.

Under the foregoing conditions the hay-fed cows ate 8.2 pounds dry matter from hay daily and consumed 11 per cent more total dry matter than the control cows. In doing so, however, these cows ate only 11.4 pounds of dry matter from pasture compared to 16.8 pounds consumed by the cows not fed hay.

Put on body weight . . .

It is obvious, of course, that the hay apparently reduced by 32 per cent the amount of the dry matter furnished by the pasture. The cows which were fed hay did not produce any more milk than those which did not get hay. The hay-fed cows did, however, gain an average of 50 pounds of body weight more per cow that the control animals. In this case, then, the 11 per cent increase in dry matter intake apparently went for body weight increase.

Last year we studied the effect of feeding either alfalfa hay or alfalfa silage. Again, we used bluegrass-white clover pasture. The cows were allowed 2 hours twice daily to eat either all the silage or hay they wanted.

In this experiment the control group did not have a roughage supplement, but they did get the usual amount of grain as was the case with the 2 supplemented groups.

Dry matter intake from hay averaged 8.8 pounds, and from silage 4.1 pounds per cow daily. Even so, however, neither supplement apparently increased the total dry matter intake of the animals.

Ate one-third less pasture . . .

Obviously, our experience last year was contrary to the results in 1954 when pastures were drier and 11 per cent increase was noted. In line with the previous year, however, there was a reduction of 34 per cent in the amount of dry matter secured from pasture when the cows *(Turn to page 781)*

The author is head of the dairy section of the Kentucky Agricultural Experiment Station.

PART OF THE HERD of registered Guernseys grazing orchard grass on Pond Acre Farm, owned by Miss Hyland. She has made 9 national records.

Helen Hyland is a record breaker!

In her fifth testing year, 62 cows averaged 12,474 pounds milk, 690 pounds fat — all this on twice-a-day milking in a modest, unpainted New York barn. Here is how she does it.

ONE of the most talked-about herds of cattle in the entire country is the registered Guernsey herd owned by Miss Helen S. Hyland, Craryville, N. Y. Last year, with 57.6 cows in milk, her D.H.I.A. herd average was 12,900 pounds milk, 692 pounds butterfat on 2x. This year, with 62 cows on test, her herd averaged 12,474 pounds of milk, 690 pounds butterfat!

Many doubted it. Others just wouldn't believe it. Who is she? What is she feeding? How does she do it?

These are typical of the questions that were cropping out at dairy meetings, first in the East, then throughout the country.

Those familiar with Helen Hyland's ability to select cows, her sound management principles, and her unique feeding methods didn't question her unusual success. We were curious enough to pay a personal visit to Pond Acre Farm just after the annual meeting of The American Guernsey Cattle Club.

Frankly, we were surprised to see an average-appearing farmstead when we arrived. This certainly was not a show place. The buildings needed paint. There was no fancy landscaping. The barn was anything but elaborate. Part of the herd was housed in an old horse barn. It gave every appearance of the run-of-the-mill New York farm that it was when Miss Hyland acquired it in 1946.

Before entering the barn, we were joined by the proud owner, looking much more the part of a farmer than she had when we first met her at one of the eastern sales.

There was a story on every cow in that barn. "Those five cows on the end now have records averaging over 1,000 pounds butterfat," was one of her first comments as we admired the size, deep ribbing, and large udders on every cow in that wing.

The first observation that struck us was the tie-stall system of housing these rugged Guernseys that were rewriting the record books. Everything was built of wood, including the mangers, feed boxes, and partitions.

Prefers tie-stalls . . .

I asked her what type of stalls she would have if she were to build a new barn. "These stalls were built after much planning and consideration and I wouldn't change a thing," was her quick reply. "We lose 4 pounds of milk per cow per day when we move a cow into a stanchion stall in the other wing. I would, though, provide more box stalls for the older cows, and they would have dirt floors. We have already made a few; we use a gravel bottom and cover it with sand. Cows don't slip on dirt, also, the stalls don't get so wet. They're much better than concrete floors."

We wondered if the stalls were large enough for these bigger-than-average Guernseys. "They're just right," she said, "they are about 54 inches wide and 5 feet long."

A special feature of the stalls was the raised feed manger, equipped with a wooden grain box about 2 feet square that was only 6 or 8 inches deep. "I don't believe in having cows stretch their necks to the bottom of a deep manger to eat," was her explanation for having the mangers raised.

I fully expected to see one or two clever test cow milkers around the barn, but during my visit there was just "Old John," a devoted livestock man who had worked for Miss Hyland some 18 years (years ago he cared for Miss Hyland's Hackney horses); Bob, a young man in his 20's who seemed to be the main milker; and Benny, an 18-year-old boy who Miss Hyland affectionately referred to as "a terrific cow man."

Insists on hand stripping . . .

As the cows were not eating, the subject of milking methods came up before feeding. Miss Hyland had definite ideas about how cows should be milked. She told us that every cow was machine-milked (the make of machine was important), but she also saw to it that every cow was hand-stripped.

MISS HYLAND poses with one of the many favorites in her outstanding Guernsey herd.

"I can increase the fat test on the average cow brought in here by .2 as a result of hand stripping," she told us. In addition, she believes you get as much as 4 additional pounds of milk by hand stripping. Two men operate three units, and when she is there, she is the hand stripper. Otherwise the other man does it.

It would seem that in a herd with such high production, there would be some troubles with udder congestion, acetonemia, or other ailments. "We have no serious troubles," was Miss Hyland's straight comment when queried on this subject. She was high in her praise of the veterinarian whose services, she pointed out, were invaluable to her.

Discussing mastitis, Miss Hyland told us that in a recent examination of 67 cows, there were just three quarters needing treatment.

Some of the heavier-producing cows have little or no dry periods. They milk straight through their lactations. We examined a cow that had freshened that morning, and were amazed at the lack of hard udder swelling.

Other cows, needing a dry period but almost impossible to dry off, are put into an old horse barn nearby. "I believe it's important to change the environment of those heavy milkers when they should go dry. We take the grain away for a few days, but continue feeding beet pulp and citrus pulp so they won't lose weight. They get first-cutting hay, then are stripped out at odd times, so they have their milking routine broken up. Milk is never left in an udder that has been milked, however. Some cows are milked once daily straight through the so-called dry period to avoid damaging the udder." This, in Miss Hyland's words, is her routine of handling dry cows.

To show you just how much attention this woman gives her herd, she told us about the recent calving of her favorite cow, Five-Star Dolly. She checked her every two hours the night she was due to calve, beginning at 9 p.m. When she checked her at 3 a.m., she saw that the cow was ready to calve, so called the veterinarian to make certain there would be no trouble. Dolly calved at 3:45 a.m. (Dolly is the first cow of the breed to make over 1,100 pounds of butterfat on 2x . . . she has three records over 1,000 pounds of butterfat.)

On acetonemia, Miss Hyland feels certain it is a secondary, rather than a primary condition. "In our herd, acetonemia appears to be the result of some other disturbance," she told us, "a cow can develop acetonemia as a result of a sudden shock. It is not a major disturbance in this herd." She and the help treat the cows gently, complains that too few folks are aware of how sensitive a cow really is.

Now about that unique feeding system. It definitely is different from any we have seen. There is an automatic water cup in every manger, of course, and a 4-pound block of salt in each stall. She reported the cows consume, on the average, 4 of these blocks each year. No other minerals are fed.

Feeds same throughout lactation . . .

She feeds to each cow per day no more than 10 pounds of the best hay she can grow. It's alfalfa or birdsfoot trefoil. She prefers the trefoil. Hay goes in the large part of the manger early in the morning. To each cow, John feeds 35 pounds of grass or corn silage and adds 4 pounds of beet pulp and citrus pulp that have been mixed and soaked. Miss Hyland then feeds the grain on top of the silage and pulp.

The grain is a 14 per cent commercial fitting ration, and the amount is determined by the amount of milk the cow is expected to produce at the peak of her lactation. It does not exceed 14 pounds per cow per day. However, if a cow is started at 14 pounds, she will receive that amount throughout her lactation depending, of course, on her condition.

It is Miss Hyland's opinion that by reducing the amount of grain fed as a cow nears the end of her lactation, you don't permit her to put on the extra flesh that is needed. Instead, you cause her to lose weight so that her milk production can only go down further.

This grain is all fed early in the morning and before milking in the afternoon. Just before noon each cow gets about 2 pounds of crimped oats on top of the grain (it seldom is cleaned up before noon). By 1 o'clock in the afternoon the boxes are eaten clean.

She prefers to call her system "continuous feeding," since the cows never are hungry enough to gulp down the feed when it is offered, but instead, keep eating throughout the morning. Any feed left in the boxes is fed to a fine group of heifers outside.

Nets $604 per cow . . .

Should you question the amount of feed these cows consume, and what it costs, her D.H.I.A. records from last year show the total value of product produced per cow was $936, while her income per cow over feed cost was $604.

While it was too early for pasture when we visited Pond Acre Farm, the herd was ready to start on Balboa rye, then orchard grass pasture.

We asked Miss Hyland if she worked in the fields with the men. "All the time," she said. "I love to mow hay." A typical morning routine for this busy woman is to get up at 5 a.m., feed cows grain and hay after John feeds silage, strip behind the machines, then see how the young calves are doing.

You naturally are curious about the background of this enthusiastic Guernsey breeder who already has made nine National Class Leading records in five short years of testing. The daughter of a consultant engineer, she couldn't wait until she was 21 so she could rent a farm. "The only thing I ever wanted to do," she told us, "was to run a farm." When she was 21 she did, and she didn't see her folks for 6 months, their thought being she might give up the idea. She didn't.

Miss Hyland formerly owned a farm on Long Island, N. Y., where she owned Hackney jumping horses, German Shepherd dogs, and Jersey cattle. She became a recognized horse judge and still judges an occasional 4-H horse show. In 1936 she had a disastrous fire. It destroyed her barn, milk house, and 11 of her 18 horses.

Doesn't pay high prices . . .

Within a few months she became interested in buying cattle, and in 1946 bought the old farmstead near Craryville. At first she assembled a mixed herd but eventually became interested in registered Guernseys.

The average person may think she goes out and buys expensive cows to make these high records. This definitely is not true. The highest price she has paid for a cow is $750; the average is around $400. We asked about one cow that showed more age than anything else in the herd. She laughed when she told us that this cow cost her $140, later made 18,560 pounds of milk, 889 pounds of butterfat, despite having an udder containing a lot of scar tissue.

We asked what she looked for when she selected a cow for her herd. Her horse training was evident in her answer, since she told us she wanted a cow with sound feet and legs, a good face, deep ribbing, good udder, and plenty of strength.

After making some good D.H.I.A. records, it was Joe Pendergast, fieldman for the American Guernsey Cattle Club, who persuaded her to go on H.I.R., the official testing program for the Guernsey breed. Since then she has done more than her share of rewriting the records.

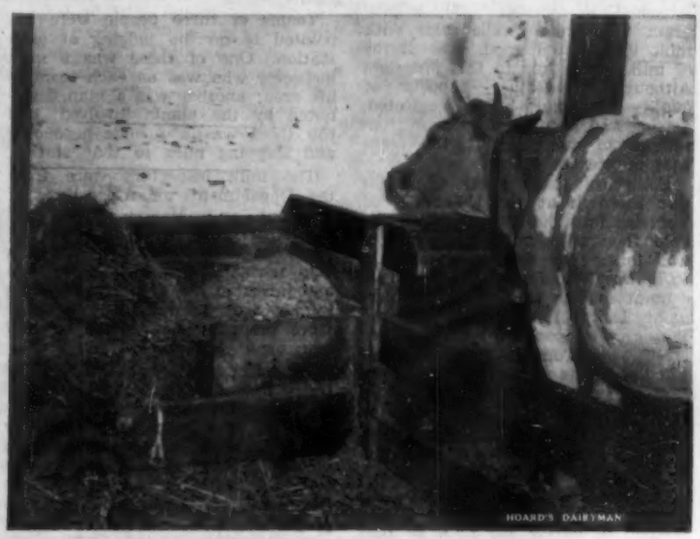
She has done some showing on her own; one of her cows was grand champion at the Capital-District Show last summer. A cow she consigned topped the New York Sale last fall at $4,000.

Miss Hyland is very much interested in 4-H club work and sells an occasional heifer to 4-H members. The local club agent visited the farm in search of 4-H heifers the day we were there. She will truck any local 4-H club member's heifer any place in the county. She has been president of the Capital-District Guernsey Association the past two years, and is chairman of the show committee.

How does she do it? She personally sees to it her cows are carefully fed, and well managed. She has no secrets. Others could do it. Seldom, however, will you find anyone with the know-how and interest this woman possesses. On second thought, there may be one secret. Exhibiting the traditional woman's prerogative, she never did reveal her age.

THE END

OVER-ALL VIEW of Pond Acre Farm, surrounded by the rolling hills, shows the horse barn in the foreground, that is used for dry cows and as a maternity barn; main barn is flanked by two silos on the right.



THE FEEDING ARRANGEMENT here is quite different from most. The raised wooden feed manger is equipped with a grain box on one side; grain is fed on top of the silage and hay is fed on the left.

Increase milk sales... with milk that tastes good

by Alec Bradfield and W. A. Dodge

Milk from 10,000 Vermont dairy farms was judged for off-flavors. Here is what the "tasters" found.

NEARLY half of the people who drink milk, drink it because they like it. If more people are to buy and drink more milk, it must taste good. How many people are there who do not drink milk?

Recent surveys show that about half the people in the United States —over the age of 25—do not drink milk regularly. What a market! What an opportunity! How are we going to reach these people? By providing good tasting milk!

It was with these thoughts in mind that the dairymen in Vermont launched, in October 1955, a program to increase milk sales with milk that tasted good. The flavor of milk is the key to this program. Although the other aspects of quality are not being neglected, getting and keeping top flavor from farmer to consumer is the main part of present efforts.

Following three years of intensive research at the University of Vermont into the causes of undesirable flavors in milk, a committee was formed to develop a program to improve the flavor of milk. This committee was set up by the Vermont Dairy Plant Operators and Managers Association with Elmer E. Towne, Commissioner of Agriculture, as its chairman. The committee formulated a program in two parts:

1. To attempt to eliminate undesirable flavors in milk at the source of production—the farm.

2. To educate consumers and all people handling milk in the proper method of caring for milk so that its fine desirable flavor would be retained.

The authors were appointed as a sub-committee to carry out the first part of the program.

It was recognized that two things needed to be done:

1. Find out how good or bad each farmer's milk was and the cause of those undesirable flavors that were found.

2. Inform farmers how to eliminate such off-flavors.

The first step was to prepare a pamphlet describing how to produce good tasting milk, and describing causes and corrective measures for the most common off-flavors found.

Judged farmers' milk . . .

In order to reach all the dairymen in the state, it was necessary to train people in all parts of the state to judge milk for flavor. It was decided to judge dairymen's milk at the receiving station. With bulk tank routes, samples were obtained at the farms by the tank truck drivers and brought into the plants.

Teams of three people were appointed to do the judging at each station. One of these was a milk inspector who was on each team in his area; another was a man designated by the plants involved; and the third was a farmer producing and shipping milk to that station.

The milk inspectors were from the Departments of Agriculture of Vermont and Massachusetts, and the New York State Health Department. They were the inspectors who normally inspected the plants and farms in the area in which the station was located. The member from the plant was either a plant man or a fieldman.

An initial school was held at the Dairy Department of the University of Vermont which was attended by most of the inspectors and key plant personnel and fieldmen from various parts of the state. This was followed by 11 schools throughout the state to train dairymen to judge milk. When these schools were completed nearly 400 people had received an introductory course in judging milk for flavor.

We were now ready to do the actual judging of milk as it was received at the various stations. Schedules were set up and by Christmas 1955 all stations and bottling plants in the state had been covered—that is to say almost all. One does not expect 100 per cent in a voluntary program like this, but we reached 98.7 per cent. However, the milk from 10,000 farms had been judged for flavor by the above date.

Score cards sent . . .

As soon as judging was completed at a station a score card was sent to each producer indicating whether his milk was "good," "fair," or "poor." This was accompanied by one of the brieflets, No. 956. If the score was "fair" or "poor," the probable source of trouble was circled and reference made to the page in the brieflet carrying information on the cause and remedy for this particular trouble.

Blue pencil was used to indicate "good," brown for "fair," and red for "poor." In most cases the fieldman followed right up to assist the dairyman in eliminating the trouble. The score sheets were signed by each member of the team doing the judging. The identity of the samples was kept secret from the team.

County agents and their staffs rendered valuable assistance in this program.

The program resulted in tremendous enthusiasm and cooperation on the part of everyone concerned. Farmers became very much interested and are doing their best to improve the flavor of their milk. The dairymen enjoyed being on judging teams and they scored milk more severely than technicians even though they knew their own milk was somewhere in the lot.

This all adds up to the fact that consumers of Vermont milk will find it clean, of low bacterial content, and having a delightful taste that calls for more.

Barny . . .

Dirty stables often cause barny flavor. A dirty, cobwebby barn, with poor ventilation and an accumulation of manure, has an odor like nothing else. Add to this a few pigeons and livestock, other than cows, and the odor is very definite.

When the cows breathe this polluted air, the odors travel by way of the lungs and the blood to the milk, resulting in a poor-tasting product. Some of these odors can

also be picked up by the warm milk standing uncovered in the stable.

Dirty cows and unclean milking habits add to the strength and character of this flavor. Who washes the cow's teats—the milker or the milking machine? Ever notice how clean the lower part of the cow's teats are when the milking machine is removed? Are the inflations allowed to fall on the floor or hang low enough to pick up bedding, et cetera, and carry it into the milk?

Prevention:

Stables must be clean.

Cows must be clean.

Milkers must be clean.

Stables must be dry and not dusty.

Gutters and floors should be sprinkled with barn lime.

Salty . . .

Salty flavor hides the natural, slightly sweet flavor of milk. Some people definitely dislike saltiness.

Some cows produce salty milk all the time. There's not much that can be done about these animals except get rid of them when you have the chance.

Cows afflicted with mastitis frequently give salty milk. In fact, one of the earlier tests for mastitis measured the degree of saltiness in the milk. Most states prohibit the sale of milk from diseased cows.

The authors are on the staff of the Animal and Dairy Husbandry Department, University of Vermont.

Many cases of mastitis can be cured today. However, milk from these cows should not be shipped

until the trouble is cleared up.

When cows are being dried off they will frequently produce salty milk. This is especially true if they are dried off slowly. The best way is to take the grain away from the cows and a few days later stop milking. Cows will soon dry off with no harmful effect on either the cow or the milk. Any milk taken from the cows during this time should, of course, be discarded.

Then there are the cows that have had trouble with breeding. There may be a period of up to two years between calving. A cow that has been milking 10 to 12 months may start giving off-flavored milk at any time. If this happens, dry her off at once even though she may not be due to freshen for several months.

Prevention:

Do not ship milk from cows that have mastitis.

Do not ship milk from strippers.

Rancid . . .

Rancid, to many older folks, brings back memories of strong, rancid butter.

This flavor is caused by a breakdown of the butterfat which releases strong-flavored acids. It is

one of the most objectionable flavors found in milk and makes it unfit to drink. The action is caused by the enzyme lipase which is present in all milk.

Cows well advanced in lactation give milk that is highly susceptible to rancidity. There's no way of predicting just when it will appear. Some cows have been known to produce rancid milk after only eight months' lactation; others take longer. Stripper cows almost always produce it.

Very slow cooling of milk, or cooling, warming, and cooling again, is almost sure to develop it.

Agitation that produces foaming with warm milk has been shown to produce rancidity. It has been shown that pipeline milkers having risers in the line will cause this trouble. Slow cooling with agitation may start rancidity.

This is a flavor that takes time to develop. Although not too noticeable when the milk is first drawn, in a few hours it is so rancid no one would drink it. During the early stages it is often called unclean.

Prevention:

Watch cows in late lactation.

Dry off as soon as rancid flavor appears.

Do not ship stripper milk.

Cool as quickly as possible.

Agitate warm milk as little as possible.

Remove risers in pipelines.

Feed . . .

Milk will taste better if greater care is given to feeding cows. Probably three-fourths of the complaints about milk flavors are caused by feed.

A sudden change from winter feeding, or old pasture, to a fresh

lush stand will show up at once as a strong flavor in the milk. Make such changes gradually. Take the cows out of this kind of pasture two or three hours before milking.

Many weeds when eaten by cows will give a strong flavor to milk. Some of the worst offenders are wild onion or leek, skunk cabbage, and some of the mustards.

Silage flavor is common and frequently quite objectionable. The feeding of **any** silage **before** milking results in this flavor. Silage fed three hours before milking gives the strongest flavor. This tastes more like rancid milk than silage and is very objectionable. Feed silage at least five hours before milking to be sure that the flavor does not appear in the milk. It's safer to feed it shortly after milking. This permits the flavor-causing materials to pass entirely through the cow's digestive system before the next milking.

If the cows breathe the odor of silage, you will still notice the flavor in the milk.

Prevention:

Use the same precautions in the case of any strong-smelling feeds.

Feed silage immediately **after** milking.

Take cows out of lush pasture three hours before milking.

Malty . . .

High bacteria count is the main cause of malty flavor. Bacteria grow and multiply rapidly in milk. Malty flavor develops when the bacterial content is very high but be-

fore the milk has had time to sour.

Keep cows, stable, and all surroundings clean, so that dirt cannot get into the milk. Dirt carries bacteria.

Even though you can strain the dirt out, you can't strain out the bacteria that entered with it. They are so small they go right through the strainer pad and begin spoiling the milk right away.

You can use the strainer as a measure of how well the milking was done; the cleaner the strainer pad, the better the milk will be.

If the milk is not all removed from utensils and equipment, bacteria will multiply there rapidly. The next time you use the equipment, the fresh milk gets an extra dose of these bacteria. The cycle continues until you can't produce any milk of low bacterial count.

Bacteria cannot grow at low temperatures. So cool milk to 40 degrees or lower as quickly as possible and keep it cold, at the farm and in transit.

Prevention:

Keep cows clean.

Keep utensils clean.

Keep dirt out of milk.

Cool milk quickly.

Keep milk cold.

High acid . . .

In these days of mechanical refrigeration, there's no excuse for sour milk. There's only one cause—large numbers of bacteria.

Bacteria need three things in order to grow and multiply — food, moisture, and the right temperature. Eliminate any one of these and they cannot thrive. Milk provides the first two.

The bacteria that cause milk to sour feed on the lactose or milk sugar. It's a perfect food for them. The only control is temperature.

The ideal temperature for this type of bacteria is 72 degrees. They will grow at temperatures a little higher than this and also at temperatures down to 50 degrees, although at a slower rate.

Another group of bacteria will grow slowly at temperatures between 38 degrees and 50 degrees. This group causes milk to ferment, which is just as bad as souring.

Milk in the milker pail is about 90 degrees. It must be cooled to lower than 40 degrees before bacterial growth is halted. The temperatures between 90 degrees and 40 degrees are growing temperatures for these bacteria. At the most favorable growing temperatures a new generation of bacteria is produced every 20 minutes. To stop the bacteria from growing at all, the temperature must be reduced to between 50 degrees and 60 degrees in 20 minutes from the time the milk is drawn.

As bacteria grow more slowly at the lower temperatures, speed is not so important from 60 degrees to 40 degrees. At the beginning of the cooling, SPEED is absolutely essential if you are going to produce milk with a low bacterial count.

Prevention:

Cool milk quickly to 40 degrees or lower.

Keep cold.

Keep water up to necks of cans.

Oxidized . . .

If you want to know what oxidized milk tastes like, just chew a piece of cardboard. This flavor is becoming more common and most consumers object to it.

There are three different types of this flavor, each having a different cause.

1. Copper or iron. Milk coming in contact with bare copper or iron will pick up small particles of these metals which in turn cause oxidized flavor. One ounce of copper can cause oxidized flavor in 62,500 pounds of milk. The use of metals other than copper will avoid this trouble. Stainless steel milk utensils and equipment are rapidly doing away with this source of oxidized flavor. All tinned iron equipment, such as milk cans, should be re-

tinned as soon as rust spots appear.

2. Daylight. When milk is exposed to sunlight, or even just daylight, oxidized flavor is sure to appear. This is often called daylight flavor. An exposure of 15 minutes will often develop it. Therefore, keep milk away from light as much as possible.

3. Certain cows produce oxidized milk. In some cases it is oxidized when drawn; in others it takes some time to develop.

Prevention:

Use stainless steel.

Keep cans well tinned.

Keep milk away from light.

Unnatural . . .

Consumers sometimes complain about medicinal or disinfectant flavor in milk. Something gets into the milk at the farm that produces the flavor.

Some medications used for sore, injured, or cracked teats have strong, pungent odors. By carelessly treating one teat you can flavor a large quantity of milk.

For cracked and sore teats there are many tasteless and odorless products on the market. Plain colorless petroleum jelly is as effective as any. If a teat is badly injured consult a veterinarian. It is usually best to discard the milk from such a teat until it is healed.

Most disinfectant sprays have a creosote base. This has the same odor as the familiar hospital disinfectant. It is a potent source of flavor in milk. When using a disinfectant avoid getting it on forage and put as little as possible on mangers.

Insect sprays may also cause trouble. Most of them have some odor which can flavor the milk. A spray for mange containing benzene hexachloride has been found to cause an objectionable flavor in milk. Do not use these sprays immediately before or during milking.

Some forage insect control sprays leave residue on the forage that will flavor milk when consumed by the cows.

Prevention:

Use tasteless and odorless medications on teats.

Use sprays that have little or no odor.

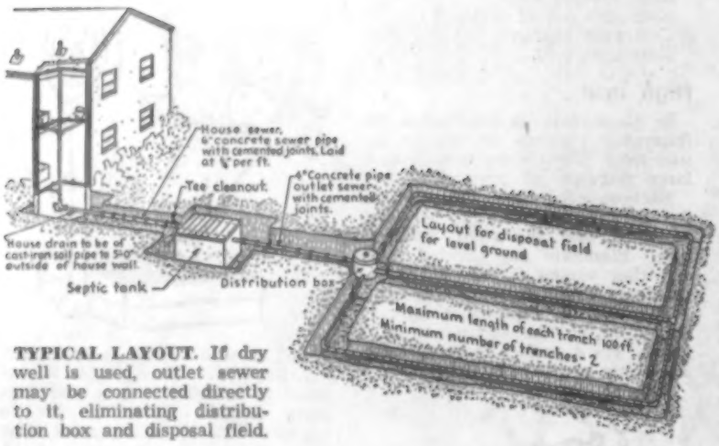
Do not use fly sprays just before milking.

THE END

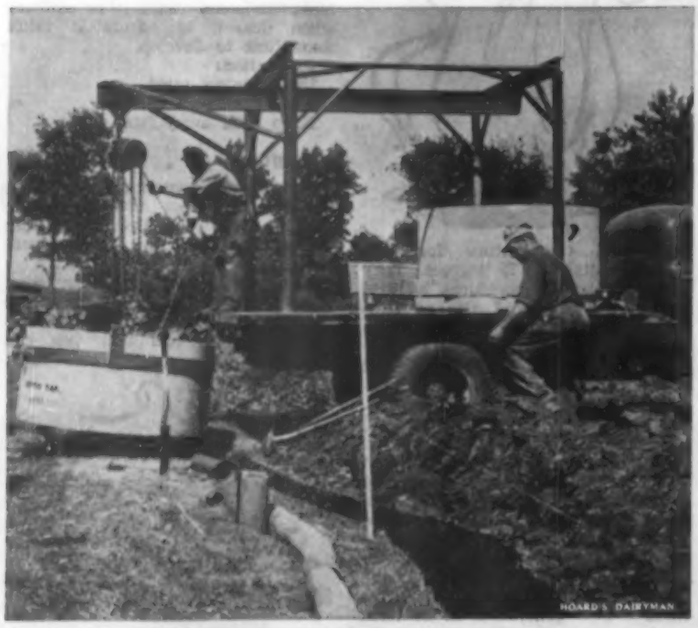
Build your septic tank large enough

Most trouble in sewage disposal systems is caused by small septic tanks. Farms should be served by 850-gallon tanks.

by D. W. Bates


House sewer, 6" concrete sewer pipe with cemented joints. Laid at ¼" per ft.
Tee cleanout
4" Concrete pipe outlet sewer with cemented joints.
House drain to be of cast-iron soil pipe to 5'-0" outside of house wall.
Septic tank
Distribution box
Layout for disposal field for level ground
Maximum length of each trench 100 ft.
Minimum number of trenches - 2

TYPICAL LAYOUT. If dry well is used, outlet sewer may be connected directly to it, eliminating distribution box and disposal field.



PRECAST CONCRETE SEPTIC TANKS, available in many areas, are strong and durable and can quickly be put in place. They may be round or rectangular in shape; just be sure that it will fit your needs.

CAST-IN-PLACE TANK has 6-inch walls. Tee sections of the sewer pipe are used for inlet and outlet.

DRAIN TILE should be placed ¼-inch apart and strips of waterproof paper placed over the joints.

IN ANY residence having a water system but not served by a sanitary sewer there immediately arises a problem of sewage disposal. Since sanitary sewers are not available in the country, sewage disposal is a problem on many farms.

A farm sewage disposal system consists of four parts:

(1) the house sewer which carries the wastes to the septic tank,

(2) the septic tank where the sewage is acted upon by certain bacteria,

(3) the outlet through which the sewage liquid or effluent is carried to,

(4) the final disposal which is usually a dry well or tile lines placed near the surface of the ground.

The house sewer line usually causes little difficulty. It should be built of 6-inch diameter sewer pipe with tight joints laid with a slope of at least 1 inch to 4 feet. The sewer line should have no sharp bends which might cause clogging. If the distance from the house to the septic tank is a long one, 4-inch tile is preferable. This is because the more solid parts of the sewage are actually floated on the liquid and this can be done better in a smaller pipe over longer distances. To avoid danger of clogging at the inlet of the tank, however, the last length of pipe before the tank should be 6-inch diameter.

It is at the septic tank that trouble usually begins. There are numerous ideas "floating" around as to how a septic tank should be constructed and as to what takes place in one.

Broken down by bacteria . . .

Actually the septic tank is a large holding chamber for raw sewage. In the tank the sewage is broken down into liquids, gases, and mineral particles by the action of bacteria.

The heavy particles which cannot be broken down settle at the bottom in the form of sludge. The light particles rise to the top forming an airtight scum over the surface of the liquid. Gases flow back through the sewer line and out the vent for the system which usually passes up through the roof of the house.

It is necessary that the inlet for the tank be constructed so that the incoming sewage flows in beneath the scum. The outlet should be constructed so that outgoing liquid or effluent flows out from beneath the scum, too.

The question in the minds of many is, "How do the bacteria get into the tank and how does the bacterial action start?" There are actually millions of bacteria in the raw sewage. If the tank is properly constructed the bacterial action will start itself. However, if the tank is to operate successfully, it must be large enough so that the sewage can remain in it long enough for the bacterial action to take place.

The first rule then, for a successful sewage system is **build the septic tank large enough.** Ninety per cent of all farm sewage disposal problems stem from the fact that the septic tank is too small. With a septic tank of adequate capacity, the liquid or effluent which flows out of it will be a clear liquid with no suspended solids in it.

In a small tank the sewage cannot remain long enough for complete bacterial action to take place and the liquid which flows out will contain sludge and raw sewage. When this condition exists, trouble is in the making because the sludge and raw sewage will soon clog the pores of the soil into which it is intended that the effluent be absorbed.

Large septic tank . . .

A septic tank for any year-round dwelling should have a capacity of **at least** 500 gallons. If more than four persons are to use it, the capacity should be greater. A recommended size tank for the average farm family is one having a usable capacity of 850 gallons. If a garbage grinder is used, this capacity should be increased by 50 per cent because then a higher proportion of solids are admitted to the tank.

Why is so large a tank necessary?

It is estimated that each person in the household will require 40 gallons of water per day. This includes water for drinking, washing, cooking, bathing, cleaning, and flushing the toilet. In order for bacterial action to be completed in the tank, the sewage must remain in the tank for about three days. This means that the tank should have a usable capacity of approximately 120 gallons for each person in the household.

Since it is not practical to build tanks in increments of 120 gallons and because the number of persons using it may fluctuate, it has proved practical to build what is frequently termed a family-size tank of 850 gallons. This will accommodate a family of six or seven persons with some reserve capacity for week-end guests or hired help.

All too frequently it is observed that when an individual is asked

(Continued on page 776)

The author is an extension agricultural engineer, University of Minnesota.

PREPARATIONS ARE UNDERWAY on the O. M. Sullivan farm, Sanilac County, Mich., for fall lawn seeding. Working in foreground is son, Leo.

How to start a good lawn

Choose good seed mixture; prepare firm seedbed; apply a complete fertilizer; plant in the fall. Light rain will help insure a green lawn.

by H. R. Kemmerer

THE best and actually the only good time to start a new lawn is fall (usually the middle of September). Spring seedings do not have time to form a sod which is dense enough to compete with weeds when they start germinating in late April and May.

The procedure for establishment of a new lawn is given in the following steps:

1. **After final grading apply lots of manure and necessary lime, phosphorus, and potash.** If your soil has not been tested, add 15 pounds of 20 per cent superphosphate, 3 pounds of muriate of potash, and 75 pounds of ground agricultural lime to each 1,000 square feet of lawn area.
2. Plow to a 6-inch depth.
3. Disk soil to 6-inch depth and level.
4. Disk starter fertilizer into upper 2 inches of soil. Apply 10 pounds of a fertilizer with a 10-8-6 or similar analysis.
5. Break the clumps or remove them from the seed bed and rake.
6. Make sure to get an even distribution of seed.
7. **Roll** to put seed in contact with the soil and to firm the seed bed.
8. Mulch slopes.
9. Hope for a light, penetrating rain.

The following grass mixtures are desirable for planting in the northeastern section of the country:

Sunny exposure, heavy soil:		
Kentucky bluegrass	80%	
Redtop	20%	*3 lbs.
Merion bluegrass	80%	
Redtop	20%	2 lbs.
Kentucky bluegrass	70%	
Colonial Bent	10%	3 lbs.
Redtop	20%	
Shade, heavy soil:		
Rough-stalked meadow grass	40%	
Merion bluegrass	40%	
Colonial Bent	10%	2 lbs.
Redtop	10%	
Sandy soil, sun or shade:		
Chewing fescue	40%	
Merion bluegrass	40%	2 lbs.
Redtop	20%	

* rate per 1,000 square feet of lawn area
%—by weight

Many commercial mixtures are available. Some are good; others are not. Good mixtures do not contain any timothy, orchard grass, tall fescue, or Canadian bluegrass. Also, the per cent of annual or perennial rye and/or redtop is never over 25 per cent.

U-3 Bermuda and Meyer zoysia are two relatively new strains of warm weather grasses that are hardy in the northeast. Their primary assets are their ability to crowd out weeds and their drought resistance. They have not as yet been used very extensively in Illinois. One large objection to their use is the fact that they turn brown with the first severe frost in fall and do not green up again until late spring.

Bare spots in your lawn that don't fill in after the grass has been fertilized should be reseeded in September. Make sure that the soil in the bare areas is loosened before seeding. Otherwise your seed and effort will have been wasted. Cutting the existing grass to a height of 1 inch and not letting it get higher than 2 inches will give the germinating seed a chance to become established.

It is very important to make sure that the lawn is large enough to do a creditable job of making an attractive foreground for the house. The size of the lawn will depend on the size of the house and the distance from the house to the road. A large house needs a large front lawn. If your house is close to the road, extension of the lawn out some distance from the front sides will also help give the feeling of spaciousness.

THE END

The author is an extension specialist in landscape gardening, University of Illinois.

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FEEDING

by N. N. Allen

What scientists have found

Stilbestrol is not recommended for dairy cattle . . . ear corn silage can substitute for grain mixture . . . cows eat coffee meal.

EVERY year, around the third week of June, the annual meeting of the American Dairy Science Association is held at some agricultural college or experiment station. This year the meeting was at the University of Connecticut at Storrs.

This association was organized 50 years ago by a group of men who were attending a summer school in agriculture at the University of Illinois.

That little group was pioneering in the teaching of dairy practices, and in seeking out better ways of carrying on the dairy operations through carefully-planned research. They found it very profitable to swap ideas with others in their annual get-togethers, which were usually held at the National Dairy Show. And today we find it just as helpful, even though it has become a very large group, and the meetings last for three days.

While there are many other matters taken up at these meetings, they are built around a program of papers reporting the very latest research results. This free exchange of ideas tends to make one big research team of the dairy workers of all of the experiment stations of this country and Canada, with some from private industry also taking part. While all sorts of problems are reported, there are always many on feeding.

Stilbestrol tried . . .

With all of the publicity on the use of stilbestrol for fattening beef cattle, it is only natural that we should have many inquiries on its value for dairy cattle. In answering such inquiries, we have advised waiting until it had been tried by the experiment stations, pointing out that there was little reason to expect benefits with cows.

A report from the Kansas station showed inconclusive effects. From the federal station at Beltsville, Md., there was a report of no effect on milk production. On the favorable side was the report of no ill effects on the cows with the additional evidence coming from the Missouri station that little or none of the hormone comes through in the milk. From South Dakota and Louisiana, there were reports indicating no effect on the growth of young calves from feeding stilbestrol.

So, it now appears safe to say that it is probably a waste of money to feed stilbestrol to dairy cattle, though there seems to be no harmful effects from feeding amounts such as have been found to improve gains in steers.

Ear corn silage good . . .

Here is something to remember the next time a late season-early frost combination fills your cribs with soft corn. At the Ohio station, it was found that silage made from ear corn (just the ears) with 46 per cent moisture gave just as good results as a grain mixture for milking cows or growing heifers when the roughage supplied enough protein. It was fed at a sufficiently higher level to allow for the high moisture.

Perhaps most of us have never thought of making silage from ear corn, but it is a satisfactory way of "cribbing" soft corn without artificial drying. The important points are:

Chop it finely enough to pack well so the air does not penetrate.

Be sure it is not too dry, adding water if necessary.

Be sure the silo is tight and in good shape.

It is pretty high-priced silage, so we do not want to take any chances on losing it. Special precautions in sealing off the top are even more important than with ordinary silage.

We would not advise making silage of ear corn when it is mature enough to crib, but it may be a way out when we find ourselves with a big crop of immature corn, caught by an early frost. When and if that situation should arise, we would suggest getting detailed instructions, since it is a high-value feed, and we would not want you to take chances on spoilage.

Coffee break for cows?

A year or more ago, in this column, we told of some of the unusual feeds which have been fed to cows. Well, here is one we did not mention.

A report was given at the Dairy Science meetings on feeding experiments with dried extracted coffee meal for milking cows and growing calves. This report came from New Jersey, and the coffee meal was the residue from the manufacture of soluble coffee, the kind you stir up with hot water when you want a cup of coffee in a hurry. The cows seemed to produce just as well when getting the coffee meal as part of their diet, but they lost weight.

There was no coffee flavor in the milk, and the pulse rate of the cows was not changed.

Calves were fed starters containing up to 20 per cent of the coffee meal — dried molasses preparation. They failed to grow as well as the calves which got a starter without the coffee meal. The researchers do not attribute this to a stunting effect of the caffeine, but rather to the fact that calves did not like coffee meal, and ate less.

Digestion trials showed that the cows got substantial amounts of nutrients from the coffee meal. It is not likely that your feed dealer has coffee meal to sell, or that you will be feeding any unless you happen to be near a factory that is making soluble coffee, but it just further emphasizes what a remarkable animal the cow is.

Man does the best he can in making a drink, be it beer, wine, liquor, cocoa, or coffee. Then the cow takes the left-overs which he does not use and from them makes a far better drink than anything he has been able to produce.

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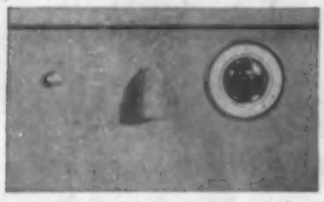

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Here is a new bulk milk cooler that has in back of it the longest, most practical dairy equipment know-how in America!... De Laval!

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If cows could only trot

(Continued from page 753)

- get a band to play "Stars and Stripes Forever";
- shoot off a cannon;
- pass out quantities of milk;
- paint the cows with black-light colors;
- put 4-year-old boys on their backs;
- make 'em march in pairs and spell out H-O-L-S-T-E-I-N or G-U-E-R-N-S-E-Y, or something;
- turn a bull loose;
- teach the calves to waltz.

It could be done—but for what gain?

We do not show to draw a crowd; not a big, roaring, cheering crowd of people who neither know nor care about cows. The poet wrote about the flower "born to blush unseen and waste its sweetness on the desert air." And so it is with cows. If nobody came to see them and only the judge, a witness, and the showmen were on hand, the over-

whelming percentage of good from showing would still be realized.

Sitting in the bleachers or leaning on the rail, you see more than a show. You see the establishment of standards which will guide breeders and dairymen alike for years ahead. You see the physical meeting of the best in type from far and near, standing side by side, so the best of these can be determined and a measurement of progress made.

From the show, great benefits are realized immediately and for all time. Prices are agreed upon with something besides an argument to bolster them. Goals are crystallized. Breeding plans are altered and a better cow results.

To the favored few who love and know fine cows, the cost and time, and the long, hard ride is a cheap price indeed for the privilege of seeing fine cows on parade. Visitors are always welcome. Perhaps in time more and more people will know what is going on and not come seeking a spectacle.

Meanwhile, if the mobs do not knock the doors open, let us not be upset and tell ourselves we have failed. A casual glance at the pictures in the history book tells us the enormous progress we have made in type improvement; shows have played a major role.

Few showing breeders care about the people in the bleachers. Their greatest thrill is leading out an animal they think is superior to the one their neighbor holds. A glance of admiration from him is worth more than the applause of thousands.

If cows were judged on their power to entertain, it would be no time at all before we would have cows capable of frisking through routines which would challenge the Ballet Russe.

But, cows are not bred to trot!

THE END

More milk consumed in 1955

IN 1955 there was a 30 per cent improvement in closing the gap between the production and consumption of milk, the National Dairy Council has announced.

The difference between milk production and consumer purchase of milk and milk products during 1955 shrank to 37 pounds of milk per capita, as against a surplus in 1954 of 53 pounds of milk per person.

This occurred, partly, because population increased faster than did total milk production (resulting in less milk being available per person). But there was also an increase in the per capita use of milk, as the following table shows:

Year	Milk production (million pounds)	Production per person (pounds)	Consumption per person (milk equivalent) (pounds)
1954	122,094	752	699
1955	123,454	747	710

How did this figure out in terms of dairy foods by retail product weights?

Americans consumed 411 pounds of dairy foods per person during 1955, 4 per cent more than in 1954.

Fluid milk consumption rose to 140 quarts per person; ice cream and dry milk hit new all-time highs; butter added to its gains, continuing an upward trend in sales begun in 1953; and cheese, cream, and evaporated milk held their own.

These facts were revealed recently in the 1956 issue of "How Americans Use Their Dairy Foods," a special 24-page report issued annually by N.D.C., and available at 50 cents per copy.

In terms of individual milk products, per person consumption for 1955 as compared with 1954 stacked up like this:

	1955	1954
Fluid milk	300 lbs. (140 qts.)	296 lbs. (138 qts.)
Butter	9.2 lbs.	9.0 lbs.
Ice Cream	18.1 lbs. (15.8 qts.)	17.5 lbs. (15.2 qts.)
Cheese	7.8 lbs.	7.8 lbs.
Evaporated and condensed milk	16.5 lbs.	16.5 lbs.
Dry whole milk	.19 lbs.	.19 lbs.
Nonfat dry milk solids	5.3 lbs.	5.1 lbs.
Fluid cream (milk equivalent)	53.0 lbs.	53.0 lbs.
	410.09 lbs.	395.09 lbs.

Price-wise, American consumers paid less for dairy foods during 1954 and 1955 than at any time since 1950, less in fact than the all-foods average. For example, while the all-foods price index stood at 110 as compared with the 1947-49 average of 100, the dairy foods index for both 1954 and 1955 was only 106.

Along with low cost, did dairy foods make significant contributions to the nation's energy and nourishment? Yes, say nutritionists. Of all foods consumed, dairy foods contributed 16 per cent of the food energy, three-fourths of the calcium, one-fourth the protein essential for building and repairing body tissue, about one-half the riboflavin, and significant quantities of other B-complex vitamins needed in the human diet.

What about fat? Dairy foods offered less than one-fourth the fat consumed last year — a fact which may surprise persons who believe, erroneously, that dairy foods are necessarily fattening.

A FREE TEST MADE J. C. PAINTER OF DRAPER, VA. CHANGE TO DE LAVAL!

"When I changed to De Laval last year, we were using four bucket milkers," says Mr. Painter, "then I tried a De Laval Sterling unit on my old vacuum line, and this is what brought about my change in milkers. We were milking 35 cows and have cut off thirty minutes' milking time, or a total of one hour a day, with *three* De Laval milkers. I was also losing all my top cows with mastitis and since the change in milkers we have not had a single new case, and the cows that had it, cleared up with no medication. We are sold on the way De Laval milks *fast* and *clean*."

Mr. Painter is proud of "Jill"—his top cow... 10,684 pounds of milk ...469 pounds of butterfat...in 306 days, twice a day milking.

DE LAVAL'S FREE COMPARISON TEST CAN MEAN CLEANER, FASTER MILKING FOR YOU!... MAIL THIS COUPON NOW!

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The complete line of B-K dairy sanitizers and cleaners is sold by your dairy, dealer, or receiving station. If it's B-K—it's best for you and your dairy!

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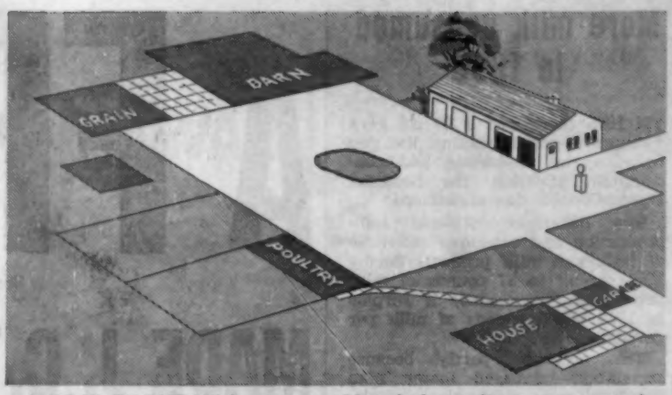

A GOOD LOCATION for your machine shed permits easy movement of machinery in and out of the shed with access to all field lanes.

How to plan a new machine shed

Be sure that it meets all of your needs — plenty of space, right location, and good protection for all farm machinery.

by W. J. Promersberger

PROGRESS in mechanization on farms has out-dated many of the older machine sheds. It has created a need for more storage space and a place to do maintenance and repair work on farm machines. Farmers also are more aware of the need for protecting their large investments in farm machinery.

You may be faced with the problem of constructing a new machine shed. Careful planning is necessary to make the building useful and valuable to you. Planning helps are available from many sources. Farm magazines, lumber yards, and your state agricultural college are always ready to help.

You should make a careful study of the size and type of machine shed that will best fit your farm. In the heavier rain and snowfall areas a fully-enclosed shed is preferred by most farmers. It gives the best protection against weather, loss by theft, and damage by dirt, animals, and birds.

Open-front sheds are sometimes used in the lighter rainfall areas and where drifting snow is no great problem.

You should also consider making the shop or machinery repair center a part of the machine shed. This is a very convenient arrangement for winter repair of machinery. If you plan to do your machinery repair during winter months, a means of heating the shop must be provided.

Choose a good location . . .

Plan for the future when selecting a location. Make sure that the machine shed will fit into the farmstead plan for years to come. Locate the shed to provide easy access to lanes leading to fields. Make certain that electric service is available. If possible, provide enough space for future additions.

Good drainage is necessary to make the building accessible in all weather and to allow surface water to drain away. Use a natural slope if possible, or in most cases a foot or more of fill will provide adequate drainage.

A good location will have enough space around the building to permit easy movement of machinery in and out of the shed. Leave space for temporary parking of machinery. A concrete approach to a part of the building will be excellent for servicing and cleaning machines.

Plan for fire protection by locating the machine shed 30 or more feet away from other buildings. A site on one side of the farm yard, easily accessible to roads and fields is most desirable.

The easier it is to store machinery, the more likely it will be stored. Space around the shed,

The author is chairman of the agricultural engineering department at North Dakota State College.

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Please send me by return mail the following marked plans and the complete bill of materials. I am enclosing $..... to cover costs.

☐ **Plan No. 514 Machine Shed and Farm Shop..... $2.50**
☐ **Plan No. 74135 Pole-type Machine Shed..... .50**

YOUR NAME .....
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City and State .....

driveways through the shed, and an adequate number of large doors, all help to make the job of storing machinery easier.

It is much easier to store machines in an orderly yet compact manner when post-free construction is used. The "half-round" type of shed construction in either steel or wood rafters provides excellent post-free storage space at reasonable cost.

Trusses permit gable-roofed sheds with no posts, and these can be built on the farm with local labor.

When posts cannot be avoided, as in low-cost pole frame sheds, place them in such a way that they will least interfere with the movement of machinery.

Estimate floor area . . .

Sketch your machine arrangement on a typical floor plan.

You can estimate the necessary floor area by measuring the width and length of each machine that you expect to store and adding a few inches for clearance.

The width of the machine shed is usually determined by the type of shed preferred, whether drive-through or side entrance. Drive-through sheds are usually 36 to 40 feet wide and have a driveway the full length of the shed. The width of a side-entrance shed is determined by the length of the longest machine to be stored. A width of 26 to 28 feet will usually accommodate the largest machines.

The length of the shed is determined by the amount of machinery to be stored or total floor area required. Be sure to allow for space for the farm shop if this is to be a part of the plan.

The headroom necessary inside the shed is about 9 to 10 feet for most machines. However, higher sections must be provided for taller machines such as combines. When a side entrance shed is used, provide a "raised-roof" section for the combine. On drive-through sheds, put a large door on one or both ends of the shed.

Organize space inside the shed so that machines will be grouped according to seasonal use. Through-drives in a shed make it easier to remove and store machines. Use these driveways to house machines that are easily moved such as tractors, trucks, trailers, and wagons.

Provide large openings . . .

Large doors are essential. Some machines require doors up to 16 feet wide and 14 feet high. However, most machines will go through doors 12 feet wide and 10 feet high. Provide drive-through sections to permit easy storage and removal of machinery. Doorways in opposite sides or opposite ends make such driveways possible.

Put three or four standard windows in the shop. Machine sheds need very few windows and if electric lights are available, the windows may be omitted.

Plans for machine sheds can be obtained from the Hoard's Dairyman Plan Service.

To order these plans, fill out the coupon and send it to Hoard's Dairyman Plan Service, Fort Atkinson, Wisconsin, with your check or money order. A complete set of blueprints and bill of materials will be sent to you by return mail.

Wife: "Oh, Henry, the lady next door has a hat just like my new one."

Hubby: "Now I suppose you want to buy another one."

Wife: "Well, it would be cheaper than moving."

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Small grain for silage

Corn-sorghum mixture — other row crops

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New Forage-and-Grain Blower Features

New clamp-ring pipe connectors make it easy to hook up sections. New distributor hood lets you control delivery to barn mow, trenches or stacks. Rubber conveyor handles forage or grain.

Put this all-forage harvesting system to work for low-cost feed on your farm. See your Allis-Chalmers dealer now.

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3 Harvesters in 1

(Right) Direct-cut grass attachment has 9 new heavy-duty features. Shown with side delivery.

(Left) New "no-wrap" draper pickup for windrows — has 95 steel lifting fingers. Fits all Allis-Chalmers Forage Harvesters.

(Bottom) Row-crop unit with standard rear delivery and Power Take-Off drive. Auxiliary engine also available.

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$1490 f.o.b. factory
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JUST SCATTER IT LIGHTLY AS YOU WALK

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Flies love it. This dry granule bait contains special attractives that lure houseflies.

Free running. Non-caking. Always loose, ready to scatter.

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Only 1 Pulsator Handles up to 6 Milker Units. Assures uniform milking to all cows in herd. Increases Milk Production.

• MILK RELEASER AND PIPELINE WASHER
Low-cost, simple, trouble-free. Washes pipeline in place, faster and cleaner.

*Now patented or pending

Crack-down on mastitis ointments coming

Six per cent of all milk contains penicillin. Food and Drug action expected in September.

by John Harms

NEW government regulations on the use of mastitis ointments containing penicillin and other antibiotics may be in the making. This is a result of official surveys showing that penicillin is still reaching the consumer through marketed milk.

While the amount of antibiotics in milk is very small at present, federal officials plan to take steps to wipe it out completely—and prevent any chance of it becoming widespread and thus a menace to the general health of the nation.

The Food and Drug Administration, charged with protecting the public from contaminated food, has conducted three nationwide surveys to determine how much of our milk is contaminated with antibiotics.

In the first survey (in 1954), 94 samples were taken and slightly more than 3 per cent of these were shown to contain penicillin. A number of other dairy products, such as cheese, butter, dried milk, and skim milk, were tested at the same time but no antibiotics were found. In the second sample survey, 474 samples of milk were tested and almost 12 per cent contained penicillin.

In the last and biggest survey, made in February, more than 1,700 samples were examined from all 48 states. About 6 per cent of the samples showed varying traces of penicillin. In addition, traces of other antibiotics were found in 1 per cent of the sampling.

Here is a list of the states in which samples of milk showed traces of penicillin.

State	No. of samples	Penicillin found in
California	187	19
Colorado	29	2
Connecticut	15	1
Delaware	9	1
Florida	39	5
Georgia	42	3
Idaho	26	4
Illinois	82	4
Indiana	33	3
Iowa	35	1
Kentucky	25	2
Maine	11	1
Maryland	24	1
Massachusetts	34	1
Michigan	28	1
Missouri	65	3
Nevada	8	1
New Jersey	87	15
New York	127	11
North Carolina	31	5
Pennsylvania	83	5
Rhode Island	20	3
Texas	80	2
Washington	48	2
Wisconsin	57	1
Wyoming	14	4

Food and Drug officials have made up their minds on how penicillin gets into the milk supply. "Carelessness," they say. One top official told Hoard's Dairyman, "We have felt from the beginning that the presence of penicillin in milk is caused by the farmer sending his milk to the dairy too soon after treatment of his mastitic cows with an antibiotic preparation."

Dr. Henry Welch, one of the government's top antibiotic authorities with the F.D.A., puts it even stronger. He says flatly, "There is no doubt in our minds that the great bulk of the milk on the American market containing antibiotic residues results from the complete disregard of (the label) warning."

All mastitis preparation labeling must carry, by law, a warning to the effect that "Milk from treated quarters should be discarded or used for purposes other than human consumption for at least 72 hours after the last treatment." And, the officials say that it is up to farmers to read the labeling and follow directions exactly—or face the responsibility of making somebody sick through antibiotics in milk.

At the time when F.D.A. first recommended discarding milk from treated cows for a period of three days it had no definite proof on just how long antibiotics remain in the udder after application.

But they told Hoard's, "We now believe that, though small amounts of antibiotics may remain in the milk after the three-day period interval recommended, 90 to 100 per cent is eliminated in most instances during the first 24 to 48 hours."

To be completely safe, you should not use milk for human consumption for at least three days after ointment application.

Not serious yet . . .

The recent survey, according to F.D.A., indicates that the problem is not acute nor serious as far as public health is concerned — at least not yet. But there is no guarantee that the situation cannot become worse in the future unless "steps are taken" to prevent it.

The thing about using penicillin-containing preparations, officials say, is that the low percentages of milk samples now showing residues can be completely eliminated if mastitis preparations are used properly.

What might the government do to make sure antibiotics stay out of the milk supply? It might take one or several of the solutions now under consideration:

It might put a ban on the use of penicillin in mastitis ointments.

Or, it might order conspicuous warnings on package labels and syringes.

Another proposal being considered would order the use of a dye in mastitis preparations which would discolor the milk from treated cows.

Officials, too, are in back of efforts to launch an educational program to inform farmers not to use milk from treated cows for at least three days after the last treatment.

At any rate, a meeting has been set, tentatively, for September 10 in Washington between the F.D.A., a special expert medical advisory board, and mastitis ointment manufacturers to try to come up with the answer.

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GET YOUR DODGE DEALER'S DEAL BEFORE YOU DECIDE!

EDITORIAL COMMENT

THE BROKEN RECORD

HARDLY a month passes but what some type of production record is broken. As more dairy farmers put into practice tried and proven management features, records that are making headlines today also will be broken.

It wasn't so many years ago that a herd average of 450 pounds butterfat was a rarity. A herd that averaged 500 pounds butterfat was acclaimed one of the greatest. Averages of 600 pounds butterfat were practically unheard of.

On page 756 of this issue you will read an account of the outstanding Guernsey herd owned by Miss Helen Hyland, New York, that averaged 690 pounds butterfat with 62 cows in milk. We recently visited a smaller Connecticut Holstein herd that averaged 710 pounds of butterfat.

Many of the individual milk and butterfat records in the various breeds have been broken during recent months. And there are more to come. It is our belief that we have not reached the top by any means.

One of the secrets of making a high herd average, of course, is intelligent culling. Knowing which cows to eliminate from the herd is one of the difficult things a dairy farmer has to do, even if he is on a testing program. As we pointed out on this page in the July 25 issue, it is almost impossible without some sort of record-keeping system.

A new low-cost dairy record-keeping plan has been announced by the United States Department of Agriculture. The plan has been approved by the American Dairy Science Association and the Extension Committee on Organization and Policy. This new "Weigh-a-Day-a-Month" program will go into operation this fall as an addition to the present Dairy Herd Improvement Association program.

The plan, similar to one operated in Illinois for the past two years, simplifies milk recording to the single practice of weighing the milk output of each cow in a herd, morning and night, one day a month. The farmer weighs the milk himself. No milk samples or butterfat tests are required. He records the weights on a special form, which he mails to a central computing office.

His only cost, averaging about 50 cents per cow per year, is for the calculation of the monthly milk production, the total production to date for each cow, and the yearly herd total to date.

If feed information is reported, calculations will also be made on value of product, total cost of feed, and income over feed cost for the herd. At the end of the year, a yearly herd summary will also be calculated. The calculated records are returned to the farmer each month for his use in (1) culling low-producing cows, (2) feeding each cow according to her production, and (3) selecting the best animals from which to raise herd replacements.

Long-time goal of the expanded program is to bring some 12 million cows, or about 50 per cent of the nation's dairy cows, under production record keeping.

While details have not been worked out as yet, the program will be supervised by State Extension Services under the local direction of county agents.

Every dairyman who sells whole milk has a general idea of what his butterfat test is. He also knows what the total herd's milk production is, but without a milk weighing or testing program, he does not know which cows are producing the milk. We can see in this new plan the possibility of getting some worthwhile information on individual cows that is long overdue.

FEEDING HAY PROFITABLE?

MANY of you may be surprised, as we were, when you read on page 755 the results of research conducted at Louisiana State and the University of Kentucky by Dr. Dwight Seath and co-workers.

Contrary to what many of us have believed, it is not always profitable to feed hay or silage while cows are on pasture. Whenever we see cows eating hay from mangers or barnyard feed racks during the pasture season, we usually find a high-producing herd cared for by a good dairy farmer. These research results will not alter our opinion of the dairy farmers who feed roughage during the pasture season, even though it may not be a profitable practice.

As the article emphatically states, the crux of this question lies in the quality of pasture available for grazing. As one would expect, it's usually the good dairy farmers with high-quality pastures who also feed hay or silage. To this minority group the research findings should be of special interest.

Observing pastures, generally, as we travel throughout the country, we still believe there are more dairymen who could profitably supplement their pastures with hay or silage than there are dairy farmers who should eliminate roughage feeding of their herd.

We commend Dr. Seath and his co-workers for conducting this type of research. Everyone who works with dairy cattle for his livelihood will agree there still are many unanswered questions on dairy management. It is only through carefully-conducted, well-controlled experiments that we will find answers to these questions.

In 1906, W. D. Hoard said:

MORE FAITH NEEDED

WE NEED besides land and cows and barns and tools, lots of faith and hope in better things. A good farmer must be the most hopeful man on earth. Every farmer who has come up out of trial and poverty and discouragement, and has built up a strong, money-making establishment, has been a man of foresight, faith, and hope.

What a bound upward dairy farming would take in profit and satisfaction if all dairy farmers had more faith in progress, improvement, and better methods. The best part of all our satisfaction in life is to see things grow better every year. Let us have more faith.

SCHOOL MILK PROGRAM EXPANDED

ANOTHER worth-while step has been taken by the United States Department of Agriculture to encourage increased consumption of fluid whole milk.

The special milk program for children will be expanded during the fiscal year beginning July 1 to include child-care institutions devoted to the care and training of underprivileged children. This will be in addition to the program that has operated during the past two school years.

The child-care institutions now eligible to take part in the program will include any nonprofit nursery school, child-care center, settlement house, summer camp, or similar nonprofit institution devoted to the care and training of underprivileged children on a public welfare or charitable basis.

This past year the program operated in 62,000 schools and approximately 1,400 million half-pints of milk were consumed. The program involves the reimbursement to schools and child-care institutions for milk served to children. Payments are made for milk served, beyond the first half-pint served as part of a Type A or Type B lunch, in schools taking part.

For schools serving Type A or Type B meals under the national school lunch program, the maximum rate of reimbursement is 4 cents per half-pint of milk. For all other schools, and for child-care institutions, the maximum reimbursement rate is 3 cents per half-pint. These are maximum rates. Lesser rates can be assigned, or the assigned rates can be adjusted, if such action is advisable.

Schools and child-care institutions taking part must use these reimbursements to reduce the price of milk to the children, except that part of the payment may be used to help cover milk distribution costs. In general, distribution costs cannot exceed 1 cent per half-pint.

Nationally, the program will be administered by the Agricultural Marketing Service of the United States Department of Agriculture. In the states, it will be administered by the state's educational agency; or, at the state's request, it may be handled in child-care institutions by some other state agency. In states where the state agency is not permitted by law to disburse funds to private schools or institutions, the Agricultural Marketing Service will administer the program directly to such schools and institutions.

We have heard it reported that, in schools where the school milk program has been in effect, a marked improvement in the aptitude and work of the students has been observed. In a time when we have such a surplus of dairy products, what better way of disposing of a small part of it could be devised?

To take part in the program, schools and child-care institutions should make written application to the state educational agency, or to the Agricultural Marketing Service, U.S.D.A., Washington 25, D. C.

Perhaps someday we will have one organization which will meet all the requirements of all farmers, but I predict that this will not come about until five years after everybody joins one church.

—A. L. McWilliams

Questions from Our Readers

Oats and field peas for silage

We have heard a great deal of favorable comment about using oats and certain grades of field peas for silage. Will you kindly advise as to your experience along this line. How heavy do you plant? Would you include a certain amount of soybean seed with the above mixture? How does the above mixture compare with alfalfa silage?
Wisconsin **W. H. D.**

A mixture of oats and field peas can be used for a supplemental or emergency forage crop. This mixture is occasionally used for hay, but it is probably used much more successfully when grown for silage. One and one-half bushels of oats and 1½ bushels of field peas is the recommended rate per acre. Yields are from 8 to 12 tons of silage on a silage moisture basis commonly reported. Any of the taller-strawed varieties of oats are satisfactory and Canadian field peas are a good companion legume. Probably the biggest reason why this mixture is not used more commonly is because of the difficulty of securing the field peas as well as the usual high price of field peas.

Mixtures of soybeans and Sudan grass in the southern half of the state or mixtures of soybeans and millet for the northern half of the state would easily give about the same tonnage of silage as the mixture of oats and field peas. One and one-half bushels of soybeans plus 6 to 8 pounds of Sudan grass or millet is the recommended rate of seeding.

Where Sudan grass is used in the mixture, the seeding date should be delayed until a week or 10 days after corn planting time or until the soil has become well-warmed. Sudan grass definitely is a hot weather crop and when sown in a cold soil, it is very slow to germinate and as the result, weeds may get the upper hand.

Silage made from mixtures of oats and peas or soybeans and Sudan grass or millet will usually run from 8 to 11 per cenf total protein on a dry matter basis. Good alfalfa silage will frequently run from 14 to 16 per cent total protein on a dry matter basis. There may not be too much difference in TDN (total digestible nutrient) or net energy of these various mixtures when used as silage.

—F. V. BURCALOW

Odor from fireplace

We would like to know if there is something we can do to the chimney of a fireplace that every once in a while gives off a very strong odor of creosote. We use the fireplace quite a lot, but the smell from the chimney comes back into the rooms and is most offensive, so we would like to eliminate the nuisance if at all possible.
Vermont **B. O.**

Creosote is formed as the result of condensation in the chimney. It is most likely to form when green wood is used as a fuel. When wood is slowly burned, it gives off acetic and pyroligneous acid; these combined with moisture form creosote.

When the draft is strong and the fire burns briskly, much of the creosote is carried out through the chimney and causes no damage. When the fire burns slowly, there is more opportunity for the creosote to form in the chimney.

The problem is usually greater in the case of an outside chimney because the walls are cold, causing condensation to take place more quickly than in a chimney which is surrounded by warm rooms.

Creosote formation is not always easy to deal with. The best suggestion that I can make is that you burn dry wood and avoid a slow-burning fire with little draft.

You do not say whether or not you have an outside chimney. The outer walls of an outside chimney should be at least two bricks thick and a good flue lining should be provided.

—D. W. BATES

Is he eligible?

A farmer with less than $400 net income in 1955 is now in his 67th year. If he can show better than the required $400 net for 18 months, beginning in 1956, is he eligible for social security?
Maine **L. M. R.**

You may come under social security even though you do not have a net income of $400. If you had gross income before expenses are deducted of $800 up to $1,800, you are permitted to consider one-half of the gross farm income as net income without computing it. This method of figuring would give one $400 to $900 as social security income.

You should see your local government official on social security and have him show you how you can qualify.

—I. F. HALL

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A new milk-metering device

This Florida-tested meter may solve the weighing problem with pipeline milkers. The meter weighs milk rather than measuring milk flow.

by H. H. Wilkowske

WHAT appears to be the first really successful milk-metering device has been introduced in Florida. After three years of concentrated research, a Florida concern has invented a device which will greatly simplify milk weighing. The meter is priced at around $150.

As pipeline milking systems gained in popularity during the last decade, many people wished for a satisfactory weighing device which could be incorporated into the system. To Jack Wilkinson, long time in the dairy business, the wish became an urge to do something about it.

He pointed out the need to a manufacturer, who immediately recognized the possibilities, and had the technical know-how and staff to begin work on the problem. It wasn't an easy task and many difficult problems had to be worked out.

In the beginning the approach to the problem was to study and try various metering devices, such as positive displacement pumps, and others. Variable milk flow, air, and foam caused their experiments to end in failure, just as they have for others who have attempted to meter milk. But then came the new idea which changed the course of their work from failure to success.

"Teeter-totter" scale . . .

The idea was to discard the thought of using a metering device as we commonly know them, and concentrate on finding a method of weighing the milk automatically. The ingeniously simple solution was the development of a two-compartment mechanism that operates like a teeter-totter and is the heart of the new milk meter.

The meter is constructed principally of white Plexiglas, a non-toxic plastic. Two spherical halves fit closely together and house the tilting rocker. In front of the sphere is a metal, direct-reading dial which clearly shows the amount of milk which has passed through the system. Assembled, the entire device weighs only five pounds when empty.

To operate the meter, connect the milk hose from the milking machine to the top tube on the meter. Then connect a short hose from the lower tube of the meter to the milk line stallcock. The meter is hung on permanently installed clamp brackets located between every other cow in a stanchion barn pipeline arrangement.

When the milking begins, the meter indicates every quarter pound of milk from the cow as it passes through the milk line. When the cow is completely milked the pounds of milk produced can be read directly from the dial. A twist of the knob in front of the dial will reset the dial to zero for the next milking.

METER weighs five pounds and is moved with milking machine. Here Jack Wilkinson shows how he moves units between the cows.

To move to the next station, disconnect the milk hose and carry the milking machine and meter to the next station as shown in the picture above.

During milking, the intermittent flow of milk enters the chamber of the meter through a baffle and deaerator unit which permits a steady and uniform flow of milk through a series of holes down to the one-piece rocker. As the milk flows into one side of the rocker and fills to capacity it tips and fills the other side. As one side fills the other drains.

Attached to the rocker is a stainless steel rocker shaft which protrudes out to the dial. At each tip of the rocker the dial is advanced in proportion to the weight of the milk.

The accuracy and reliability of the dial is determined by set screws and permanent magnets located in the dial housing. Each unit is factory preset and tested. Forced trials in the testing laboratory have shown that without resetting the machine will give correct readings for a period equivalent to 10 years. Since the machine has only recently been invented, it has not been under actual commercial use that long.

Naturally, the big question is:

The author is associate dairy technologist at the Florida Agricultural Experiment Station.

How accurately does this meter operate?

To study the new machine, one has been on trial at the University of Florida Agricultural Experiment Station research dairy farm. Not having a pipeline system, the unit was adapted for use with a regular bucket-type milker. In this arrangement there is not as great a labor-saving as when used with a pipeline system, but it served to permit its use on a trial basis.

It was found that the meter unit must be kept reasonably level at all times. This can be done through the use of brackets fastened to the vacuum line rather than having the meter hanging at the side of the milking pail.

A series of comparisons have been made by checking the milk from individual cows on various days, both by the meter and direct weighing. Preliminary trials have shown the meter and direct weighing to agree to 98.3 per cent accuracy.

The manufacturers have found the meter to give an accuracy of 99.5 per cent under ideal laboratory trials. They have reports of 97.5 per cent accuracy in field trials under commercial conditions. Because of variations in field conditions, however, the warranty issued by the factory is for a guaranteed accuracy of 96 per cent.

Two cows known to have very rapid letdown were milked and metered satisfactorily. On these two cows the meter was found to work accurately at rates of 20 pounds of milk in two minutes.

One of the problems facing the inventors was the matter of flow rates. This information was not readily available in the usual textbooks. So, actual trials were conducted in the field to determine the maximum rate at which the machine might have to operate. It is designed to operate satisfactorily up to 10 pounds per minute.

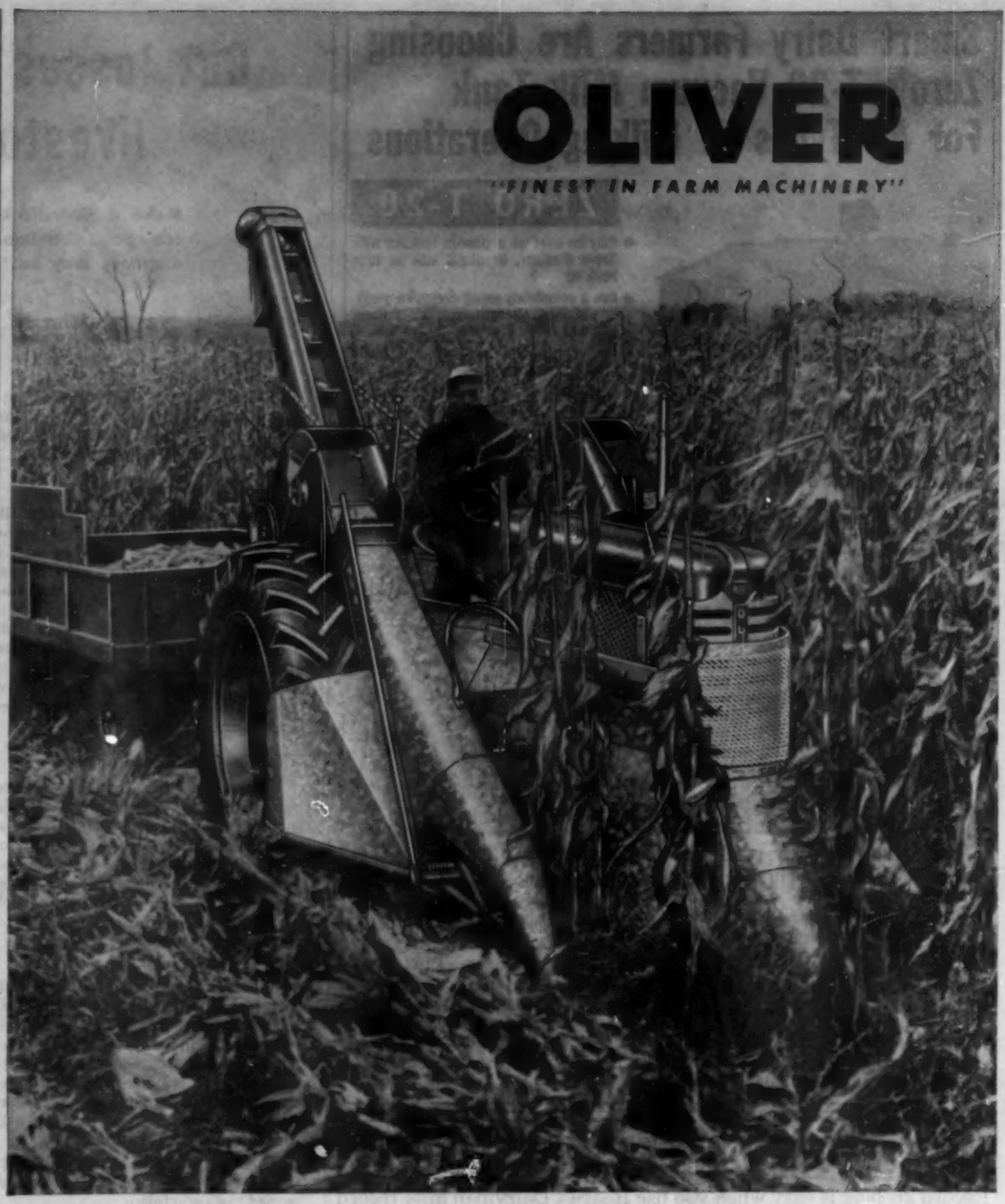
The meter is made of only a few simple parts which can be taken apart in about 10 seconds and washed in about the same length of time as one milking machine. All parts to which the milk is exposed are made of plastic, stainless steel, or neoprene. The assembly can be easily washed in warm water and sanitized.

To attest to its sanitary design the Florida Sanitarians Council, after careful consideration of its construction, approved it for use in Florida on a trial basis. This metering device appeared to meet all sanitation requirements from the point of view of ease of cleaning, type of construction, and general contribution to improvement of bacteria counts by reduction of potential contamination. Other states have given approval or have it under study.

It is significant that the milk goes through an entirely closed system and never is exposed to air. There are no milk losses due to spillage, and barns stay cleaner. It eliminates pouring milk from one container to another when milk weights are desired.

At the time the meter was tested at the University of Florida, no sampling unit was available. Recently, however, a sampler was developed which extracts approximately six drops milk from each four-ounce increment passing through the meter.

The meter and sampler should be of considerable value in commercial operations. They are not approved for D.H.I.A. weighing and sampling. Further testing and trials must be conducted before such approval can be expected.



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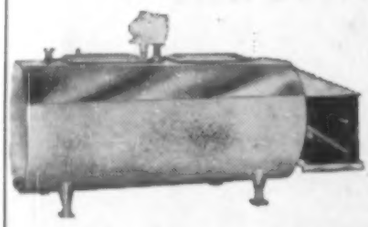

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A Vest Pocket Herd Book Is a Good Investment

Cut losses from livestock poisoning

Make a periodic check for hazards that can poison animals. Deaths difficult to diagnose may be the result of poisoning.

by John B. Herrick, D.V.M.

EVERY year thousands of animals are poisoned on farms as a result of consuming poisonous weeds or chemicals.

Lead poisoning . . .

It is not uncommon to see cattle poisoned by lead. Licking paint pails, even though they are many months old, old storage batteries, newly-painted buildings, or any object containing lead will cause diarrhea, labored breathing, and sudden deaths. It only takes minute amounts, just a few licks, to cause death. Fence off your junk piles, and burn out your paint pails before using them.

Clay pigeon poisoning . . .

Areas used for trap shoots are not safe for hog pastures due to particles of the clay pigeons, actually pitch, that the hogs will consume. In one recent case of hog poisoning the ground had been plowed for years, but the pitch particles were still present.

Rat poisons . . .

Warfarin has been found to kill pigs and other animals such as dogs and cats when the product is consumed in any amounts. Recently a drove of hogs became ill, resulting in 42 deaths. The cause was warfarin poisoning. Feed had been mixed in a mixer recently used to prepare rat bait.

Dogs and cats frequently are poisoned when they eat rats poisoned by warfarin.

Treated oats . . .

Oats treated with mercurial compounds are also dangerous to feed and will cause poisoning if fed in large amounts for any length of time. If treated seed oats are available, be sure and mix them with untreated oats at the rate of 1 part treated oats to 10 parts untreated. Do not feed any treated oats to chickens.

Fertilizer poisoning . . .

Animals, particularly cattle, may break into sheds or have access to empty fertilizer sacks, especially those containing ammonium nitrate. Even a small amount of the chemical is poisonous. Burn all fertilizer sacks and do not allow animals on pasture treated with nitrogen until the pellet or powder dissolves.

Weed killers . . .

Weed killers such as 2,4-D are not poisonous in themselves, yet foliage treated with the products and consumed by animals has been known to be fatal. Apparently weeds and forage that animals would not normally eat are changed chemically so after treatment they are palatable. Therefore, it is the plant that is poisonous, not the chemical. Animals should be kept off treated pastures for two weeks following treatment.

Insecticides . . .

In general, none of the insecticides are poisonous if used in proper amounts and dilutions. Yet numerous cases of poisonings are observed from over dosage of chlordane, lindane, DDT, and other products. Recently a group of hogs was observed to have a terrific dermatitis due to heavy doses of chlordane.

In using insecticides follow the directions on the bottle or container. Use your head with the products. Don't follow the policy of some people, "a little bit is good; a lot more will really be good."

Salt and protein poisoning . . .

It is difficult to cause salt poisoning by feeding large amounts of salt. However, the easy way of doing it is to feed large amounts without any water available. On the other hand, salt brine or the salt solution around a block of salt is poisonous. Keep the salt licks in a dry place

There is no such poisoning known as "protein poisoning". Hogs are not poisoned by large amounts of protein. A farmer couldn't financially stand the amount of protein it would take to poison animals. Suspected "protein poisoning" is due to some other factor.

Sodium fluoride . . .

Sodium fluoride is an effective wormer for swine. Yet it is a deadly poison. Due to improper use, many hogs are killed by the drug every year. The drug should be fed dry, never in a slop, and should be fed only in a quantity of 1 per cent of the ration for 24 to 48 hours. The drug should not be used for animals other than swine.

Poisonous weeds . . .

There are few poisonous weeds

"His mama likes to have him eat out . . . he bites."

in the Midwestern states consumed by livestock. There are many weeds that are dangerous. Yet in these areas there is usually enough forage that the animals prefer so the poisonous weeds will be eaten only when animals are very hungry. The exception is the cocklebur in the two-leaf stage. Pigs like this plant at this stage and it is a deadly poison. They are found early in the spring or sprout after a rain. They are not dangerous as a mature plant. Nightshade, locoweed, milkweed, larkspur, lupine, oak, hemlock, snakeroot, and death camas are some of the most common poisonous plants.

Where these plants are plentiful and feed is scarce, a rotation of pasture or supplementing the ration is about the only means of prevention. Usually poisoned animals are too badly damaged to be saved by any treatment. However, every such animal should be considered poisoned. Have your veterinarian diagnose the trouble.

Plants that cause considerable trouble when in a wilted stage, especially the second growth of the plant, are those called cyanogenetic plants. These include sorghums, Johnson grass, sudan grass, flax, and wild cherry.

Freezing or drouth will produce a wilting in young succulent shoots that changes the plant chemistry to the extent that prussic acid is formed. It is highly dangerous when eaten by animals. The forage is safe when cured, dried, or ensiled. It is also safe for pasture if the above conditions do not exist.

Animals can be easily poisoned by many chemicals, plants, and drugs. A periodic look around the farmyard is necessary to remove these hazards. When animals appear to be ill or are found dead, be suspicious of some form of poisoning. An accurate diagnosis should always be obtained in order to prevent recurrence of the ailment in other animals.

Many of these chemicals can also poison humans. Provide a safe place for all chemicals and drugs, where children will not have access to them.

A CEREMONIAL TEA in Osaka, Japan, brought together a traditionally-garbed Japanese maiden and America's Dairy Princess. Ruth Marie Peterson, America's Ambassador of Good Milk and Minnesota's Princess Kay of the Milky Way, was in Japan on an official mission for the United States Department of Agriculture. In the picture above, she went through the famed tea ceremony but diplomatically drank milk.

"We topped our County DHIA average by 3050 lbs."

"We've been feeding MoorMan's Mintrate for Dairy Cows for 4 years* and during that time we've raised our milk production average, and our herd is in uniformly better condition. Last year, according to DHIA records, our average of 23.5 cows produced 12,302 pounds of milk, against a county average of 9,252 pounds," says Jacob Butler, Manager, Bobana Farms, Fayette Co., Ohio.

"We're certain that consistent, all-year-round Mintrate feeding helped keep this average up and our feed cost down to $196.59 per cow. Our DHIA records show that for the testing year our butterfat average was 422 pounds—83 pounds per cow over the county average. This gave us a return over feed cost of $326 per cow, or $7661 for the herd.

"Certainly Mintrate feeding has given us a more efficient and profitable operation as it helps us get more milk from our home-grown grains and roughage."

MoorMan's Mintrate for Dairy Cows can help you raise *your* herd average, too. For Mintrate is a fully mineralized, protein, vitamin concentrate that helps cows get the maximum milk-producing power from home-grown grains and roughage. Only about a pound a day, *fed the year 'round,* helps you get a greater milk flow and reduce production costs.

If you'd like to lower feeding costs and at the same time increase milk and butterfat production—talk to your MoorMan Man. You'll find him mighty helpful. If a MoorMan Man doesn't call soon write Moorman Mfg. Co., Dept. P68, Quincy, Illinois.

Good breeding, as well as good feeding, is a must with Mr. Butler. With an eye to even greater milk production he has just headed his herd with the young bull Sir Bobana Elmcroft Voyageur M, a son of the famous Elmcroft Voyageur M.

MoorMan's*

Since 1885—71 years of Friendly Service

Mintrate for Dairy Cows

—one of 10 mineralized protein and vitamin concentrates that helps livestock and poultry make better use of home-grown feeds.

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PLASTIC SILO COVER CO.
114 E. 5th St. Northfield, Minn.

Make your septic tank large enough

(Continued from page 760)

"What size septic tank did you put in?" the answer given is, "I don't know. I told the plumber to put in what he thought we should have." Make it your business to know what size the tank is. If you have the proposed job out on competitive bids, remember that the cheap job with the small tank will prove to be the most expensive in the long run.

After the effluent leaves the septic tank, it passes through the outlet sewer to the disposal field. This tile can be made of ordinary 4-inch agricultural drain tile. If, however, the line passes within 50 feet of the water supply or near willow or elm trees, it is best to use sewer pipe with tightly-sealed joints. The outlet sewer should have a slope of 1 inch in 25 feet.

Final resting place . . .

The final disposal of the liquid from the septic tank depends upon the type of soil, topography, and whether or not a basement drain is used.

There are two methods in most common use. With one the effluent is discharged into tile lines laid close to the surface, and with the other the effluent is discharged into what is called a dry well.

The first method is suitable for use where the soil is fairly heavy but still has absorptive qualities. The length of the tile lines depends upon the number of people using the sewage system and, of course, upon the rate at which the soil can absorb water. In loose soils, 30 feet of drain tile for each person using the tank is satisfactory. In tight soils, as much as 100 feet of drain tile per person may be necessary.

The tile lines should be located about 10 feet apart and should have a slope of 1 inch in 25 feet. The pattern of the disposal field may depend upon the shape of the area in which it is to be installed. The important thing is to have the lines laid so that the same amount of liquid enters each. The top of the tile lines should not be more than 2 feet below the surface of the ground. The reason for this is that the soil bacteria which act on the effluent to render it harmless are present in sufficient numbers only in the top layer of soil.

Neither the septic tank nor the tile lines ordinarily give trouble from freezing in even the coldest weather if the system is in constant use. This is because the temperature of the liquid, as it leaves the tank, is approximately 50 degrees, which is sufficient to prevent the ground under the tile lines from freezing. A good sod cover usually is sufficient. However, this may not be established the first year the tile lines are put in, and it may be necessary to provide a protective covering of hay or straw. A deep blanket of snow also gives considerable protection from freezing.

Tile lines should not be laid under driveways or other exposed places where they will be completely unprotected. Lines laid in tight soils should have a depth of about 12 inches of gravel or crushed rock below them. This gives some reserve storage capacity during the day when the system is used most.

Build a dry well . . .

A second method in common use for disposing of the effluent is to discharge it into a dry well. This method is recommended in soils having a high proportion of gravel or coarse sand. The dry well is constructed by digging a deep hole and walling up the sides. The bottom is left open for the liquid to seep through into the soil below. The dry well should have a minimum depth of 5 feet below the inlet and should be at least 25 square feet in cross-sectional area. It can be either round or rectangular and can be made of concrete masonry, tile, brick, or concrete.

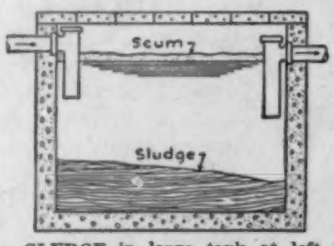
In areas where there is fine sand, openings in the sides of the dry well should be avoided as the sand may wash into the dry well through them. Generally it is desirable to place between 8 and 12 inches of coarse gravel or crushed rock in the bottom of the dry well to act as a filter.

What about maintenance of the system? If it is built properly, little maintenance is required. However, an inspection of the tank should be made every 3 to 5 years to determine the amount of sludge in the bottom. This can be done by running a probe through the clean-out tile which should be placed in the top of the tank at the time it is built and extend to within 1 foot of the surface of the ground.

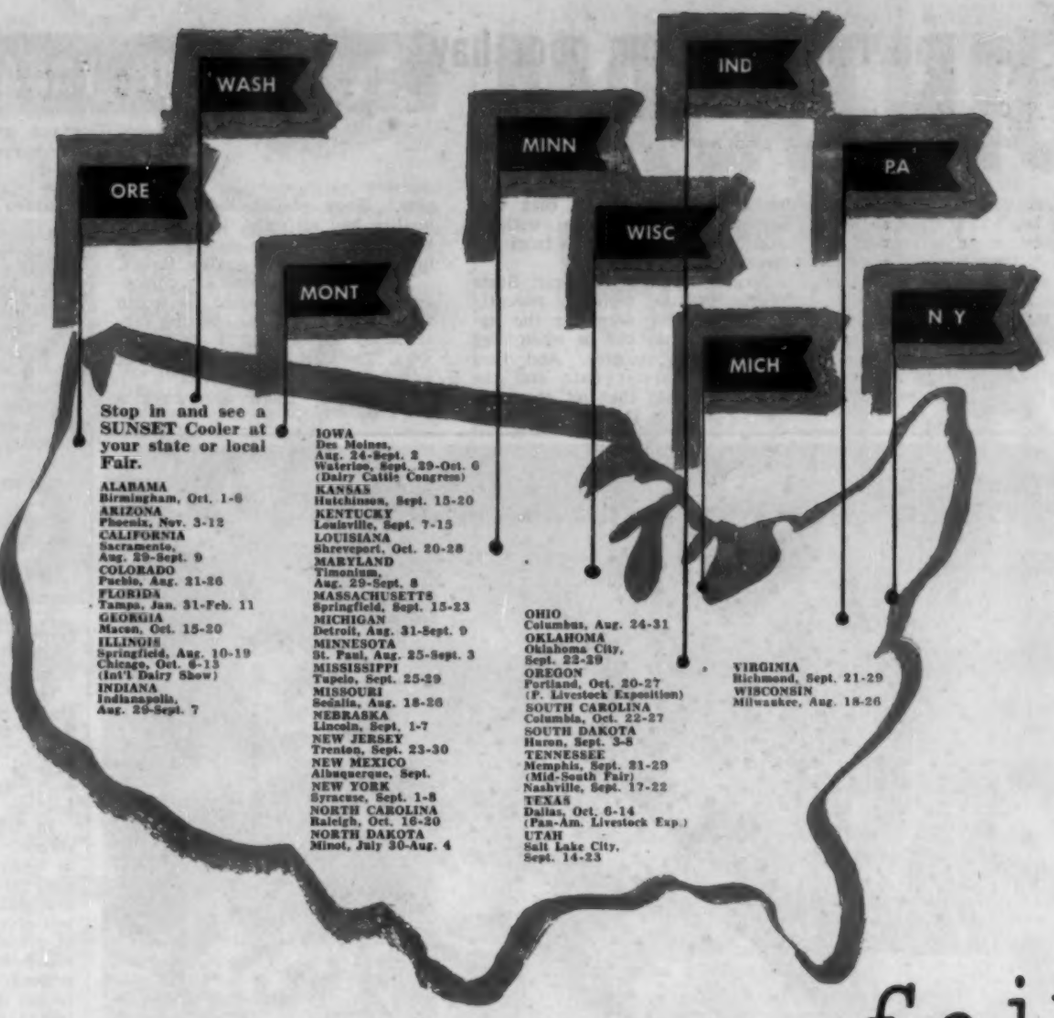
Remove sludge . . .

When the depth of the sludge reaches 18 inches, it should be removed. To do this, alternately pump and flush the tank to make sure all the sludge is placed in solution so that it can be removed. If the tank is of adequate size and maintained properly, there should be no reason for the disposal field or dry well to plug up.

Bleaches, detergents, soaps, and other household chemicals used in normal amounts will not harm the septic tank. All household waste should be run into the tank. Never by-pass the tank and run wash water or other waste directly into the disposal field. **THE END**



SLUDGE in large tank at left is well below the outlet after two years; in smaller tank on right, it has reached danger level.



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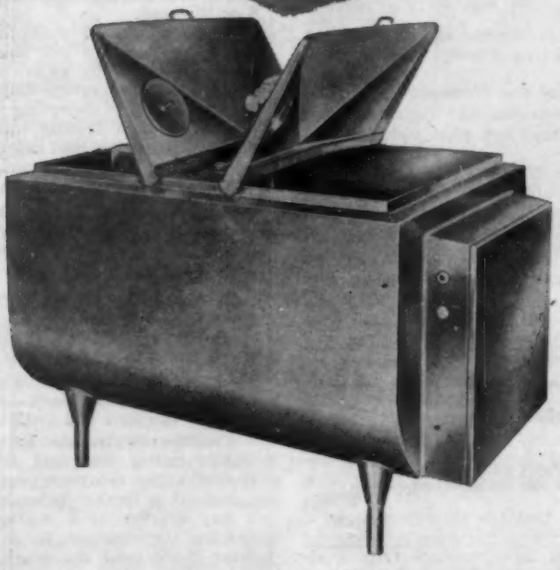

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Can you tell good from poor hay?

Give careful consideration to kinds of forages in the stand, date of harvest, and harvesting methods used.

by Cal Orr

CAN you tell good hay from poor hay? That's not as silly a question as it sounds; it sometimes stumps the experts when the only clue is how the hay looks after harvest.

You're liable to make a bad guess when you rely just on how green the hay is. Alfalfa that's cut in the early-bloom stage and rain damaged, for instance, usually is better than green hay that was harvested in full bloom without rain damage—even if it's from the same field.

A group of 14 Michigan State University staff members recently found out how deceiving the appearance of hay can be when they judged some samples. And they knew the harvest date and the amount of rain that hit the samples. They placed the medium-quality hay all right, but most of them over-rated the poor hay and under-rated the top-quality forage.

The researchers now are considering whether it would be worth while to set up forage-testing laboratories for a county or larger area. The idea is similar to that of a soil-testing laboratory.

Of course, there are ways a farmer can be something of an expert in judging how much value there is in different forage crops. But, he needs to know these facts:

The kinds of forages in the stand, the date of harvest; and the harvesting and storage methods used.

Grasses mature faster . . .

A stand high in alfalfa usually makes better-quality forage than one high in grasses. Grasses such as brome, timothy—and quack grass—usually mature quicker than legumes.

In fact, a ton of alfalfa hay harvested at the same date as a ton of brome grass has almost twice as much digestible protein.

Other things, of course, are important, too. A Michigan State University study of 172 dairy farms in south central Michigan showed that 20 farmers who had the best alfalfa-brome stands used a lot more fertilizer both at seeding time and as a top-dressing. Farmers with the poor stands used substantial amounts of fertilizer, however.

A higher percentage of the farmers with good stands were testing their soil for lime and were supplying lime more often.

Many farmers with the poorest stands pastured their alfalfa-brome fields in September.

Alfalfa-brome stands that were four or more years old were generally low in legumes and rated medium or poor quality.

In the study, date of harvest showed up as mighty important in quality. Forages cut early—by June 20—in south central Michigan are usually high in protein regardless of whether they consist largely of grasses or legumes. They often test better than 20 per cent crude protein. It is hard on alfalfa-brome to cut it earlier than June 20, unless it is a winter-hardy and wilt-resistant variety such as Vernal or Ranger alfalfa.

The crude protein content of excellent stands of alfalfa-brome ranged from a high of 22 per cent when harvested in early June to 13 or 14 per cent when harvested in mid-July.

One of the biggest bugaboos in getting good-quality hay in Michigan is rain. You can expect only a couple of days in a row with no rain in the last two weeks of June. The operations must be "quickies" when you consider that 15 to 20 hours of sunshine are needed to field-cure hay for loading or baling. That is where a field crusher or hay drier comes in handy—either will reduce the needed sunshine to 8 or 10 hours.

Research showed that the cost of feed to produce 100 pounds of milk can be cut by as much as 25 per cent on the average dairy farm in Michigan by improving quality of forage, then feeding more forage and less grain and supplement.

What you can do . . .

From these studies it looks as though a farmer who wants to improve his forage could do best by:

Using a mixture high in alfalfa.

Plowing under alfalfa after three years.

Harvesting hay a little earlier, when there's a sprinkling of bloom.

Aiming for high yields of hay and pasture by making sure the land gets enough lime and fertilizer.

Avoiding September harvest of alfalfa unless the field is to be plowed under the next year.

And, if a farmer bales his hay, a hay crusher is a big help for beating the weather. So is a hay drier if the cows are going to get good-quality loose or chopped hay from the mow.

Largest husking capacity of any mounted picker. Ten 40¾ inch husking rolls give you clean corn. Caster wheels take weight of big husking unit off tractor's back.

Does the quickest, slickest, cleanest job of picking you ever saw

New Idea 2-row mounted picker has features that gave 1955 record of 17% less corn loss than all other pickers.

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HANDY HINTS

BATHTUB FOR WATERING TANK

We purchased an old bathtub from the local plumber and put it to use as an automatic drinking fountain for our dairy cows.

With a few feet of pipe, we connected the tub to our pressure system. We used a valve and float from an old toilet. As the water goes down, the valve opens and the tub fills with water. When the tub is full, the float rises to the top and shuts off the inlet valve.

To protect the float valve, we placed a board cover over one end of the tub. Four concrete blocks form the foundation.

This cast iron tub, covered with enamel, will give years of service.

Georgia — LEWIS PARKER

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Weather and corrosion damage is a thing of the past here. All corn planter parts, cleaned, oiled and hung up high and dry for the winter make a pretty sight on the R. H. Mathiessen farm, Va.

Careful attention to precision equipment cuts down "lost" time during the busy planting season.

Virginia — WILBERT SCHAAL

TEACH CALVES TO DRINK

I have read in various farm papers what a burden it is to get newborn calves to drink. Here is something I have tried for the last two years successfully.

After the second day I take the calf from its mother after the morning feeding. About six hours later I put about a quart of real warm water in a pail and add to this one-half cup of granulated sugar.

I dip one finger into dry sugar, put it in the calf's mouth, coaxing the calf to put its head into the pail, where it will continue to taste the sugared water. I slowly release the finger from the calf's mouth and he will continue to slowly drink of his own accord.

I never have trouble from sucking calves later on as often happens when calves are brought up on nipple pails.

If they should refuse to take the next meal of milk, add just a little bit of sugar. I believe this method keeps them healthier, too, for they do not gulp any air.

Wisconsin — LILIAN GAYLORD

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We always wanted a feed cart that would be easier to push, so we built this one in our shop.

We purchased 2 used motorcycle wheels and tires and had our blacksmith make us a 3-foot axle.

The wooden box is bolted together and with one small swivel wheel on the front, we have a durable, easy-running feed cart for a very small investment.

The width of the feed alley will determine the size of the feed cart.

Ohio — RALPH TUGEND

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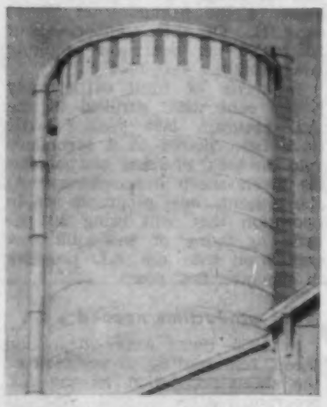

This silo roof is designed from the cost-saving, labor-saving, and safety viewpoints.

Instead of paying over $300 more for a dome roof on his new silo, Harold Rogers, Essex County, Mass., had his silo built 10 feet higher, making it 50 feet high, and topped it off with a homemade wood, gravel, and tarred flat roof with a 3 x 6 foot trapdoor in the center.

He mounted an enclosed ladder up the side and put a railing on the top for the safety of the help.

New Hampshire — CHARLES L. STRATTON

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Courtesy of American Museum of Natural History

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That's why malathion is the *preferred* insecticide for fly control! Don't spend another dollar for any fly-killer until you get all the facts about malathion!

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ARTIFICIAL BREEDING

Russians use artificial insemination

About 15 per cent of the milking cattle and 45 per cent of the sheep were serviced by artificial insemination in 1955.

by H. A. Herman

RECENTLY it was revealed that artificial insemination plays an important role in the improvement of sheep and cattle in Russia. The occasion was the Third International Congress on Animal Reproduction, which the writer attended at Cambridge, England, late in June. The information was furnished by Dr. A. V. Kvasnitski and three of his colleagues, official representatives of U.S.S.R.

The Russian delegation answered questions rather freely in a special session where translations were quickly rendered in English and French.

Prior to World War I the Russians used artificial insemination in horses. Between 1927 and 1939 their scientists released a number of very worth-while papers on semen characteristics, diluters for semen, and artificial insemination techniques. However, practically nothing has appeared in English translation since the beginning of World War II. Naturally, there was much interest in development of the A.I. program since then.

Cattle numbers to increase . . .

The Russian scientists explained that, although two million cattle were inseminated during 1955, this is about the same level as prior to the beginning of World War II. Of this number, about 85 to 90 per cent were milking cows and the rest beef cattle.

In terms of total cattle, only 5 per cent were enrolled in the A.I. program last year. Cattle have been placed in a secondary role the past 10 years and emphasis given sheep improvement. At the present time, programs are in operation that will bring 50 per cent, or more, of the milk cow population into the A.I. program in the next few years.

Wool production needed . . .

In 1955 there were 28 million sheep, representing 45 per cent of the sheep population, in the A.I. program. After World War II there was immediate need in Russia for an improved supply of wool for weaving purposes. Domestic wool production was insufficient and the fibers of poor quality. Imports were greatly reduced because of U.S.S.R. foreign policy.

The Russians stated that by using artificial insemination from rams that transmitted heavy-fleece production, along with high-quality fibers of desirable weaving length, their wool problem was solved in a space of 10 years. At present the country is nearly self-sufficient in wool production.

It was further explained that each Collective Farm has its own A.I. station and an average of 3,000 ewes are inseminated for each superior ram maintained.

Feeds improve fertility . . .

The Russians attribute a part of their successful artificial insemination program to the production of superior-quality semen by feeding the rams milk and fresh eggs. Americans will view this statement with some interest since, in 1939, it was reported that blood meal, skim milk powder, and other animal proteins improved bull fertility in Russia.

Experiments in our country, one of which the writer conducted, failed to show any beneficial results when bulls of below average fertility, as well as average fertility, were fed special rations rich in animal by-products.

Low temperature freezing . . .

It seems to be the practice in Russia to store semen at near zero temperatures even when used in the liquid state. A great deal of urea is used in their semen diluting fluids, though the exact amount was not stated.

The belief was expressed that "deep frozen semen" is the answer for the future and will be heavily utilized for sheep and cattle in U.S.S.R. in the years ahead. The Russians report they inseminated 512 sheep with frozen semen as early as 1945.

Large A. I. centers . . .

Prior to World War II Russia had many small A.I. centers. These are proving to be inefficient and less economical than large, centrally-located centers and are rapidly being consolidated.

Disease no problem . . .

In answer to a question regarding the prevalence of breeding troubles, the Russian scientists reported that *Vibrio fetus* was practically nonexistent. If present at all, it was in a very senile form. Likewise, brucellosis is no problem and is almost unknown.

As a rule, about 65 to 67 per cent of the cattle settle the first insemination and at least 79 per cent were reported as settled on the first two inseminations.

Some production proved sires are used for cattle. It is also a common plan to select young sires from high-milk-producing ancestors and sample them by inseminations involving two or three thousand cows. This plan is similar to the young sire program now in use in America.

When cows are on pasture . . .

(Continued from page 755)

were fed hay. There was a drop of 13 per cent in dry matter consumed from pasture when the cows were fed silage.

During our 1955 experiment there was no significant long-time influence on milk production. Neither was there any significant effect on body weight due to the feeding of either silage or hay as a supplement. There was, however, a short period during the latter part of the experiment (in the fall) when the feeding of hay or silage tended to produce slightly more milk. The difference, however, was not great enough to be significant, but might have been significant had the conditions prevailing extended over a longer period of time.

Our experience, then, reveals that cows fed hay and silage simply do not eat as much pasture. This brings us around to the important point—the quality of the pasture.

It seems obvious that when pasture is extremely poor, feeding of hay and silage is profitable. On the other hand, when pasture is extremely good, it is not profitable under most conditions to feed these supplements.

Under average or slightly below average pasture conditions, there will always remain a question as to whether or not we should feed hay or silage. Apparently the cow enjoys the supplemental feed because she does not graze as much. In fact, she may fall behind as much as 30 per cent in the amount of pasture forage consumed. When she does this, of course, she is merely shifting her source of nutrients.

Feed may be poorer . . .

Now, how about shifting her source of nutrients? If she improves her nutrition, we could justify such a practice. To date, there does not appear to be ample evidence that this improvement takes place. On the contrary, if the hay or silage is of poorer quality than the pasture, she actually lowers her plane of nutrition.

During 1954 and 1955 our cows consuming hay tended to have a lower total digestibility of the entire ration than those cows which were receiving only pasture and grain. There is, however, a need for more data along this line before arriving at definite conclusions.

In view of the findings to date, it is the author's opinion that when pasture is extremely good, it will not be found profitable to feed hay or silage except as a means of preventing bloat when the cows are on legume pasture.

On the other hand, however, it will probably always be profitable to feed hay and silage when pasture is reasonably poor and when there is not ample feed available.

Those dairymen having pastures falling between these two extremes will have to wait further experimental results before knowing under what conditions specifically on their farms the feeding of roughage supplements will be profitable.

THE END

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Landlord: "Did they wake you?"

Tenant: "No, luckily I was up—playing my tuba."

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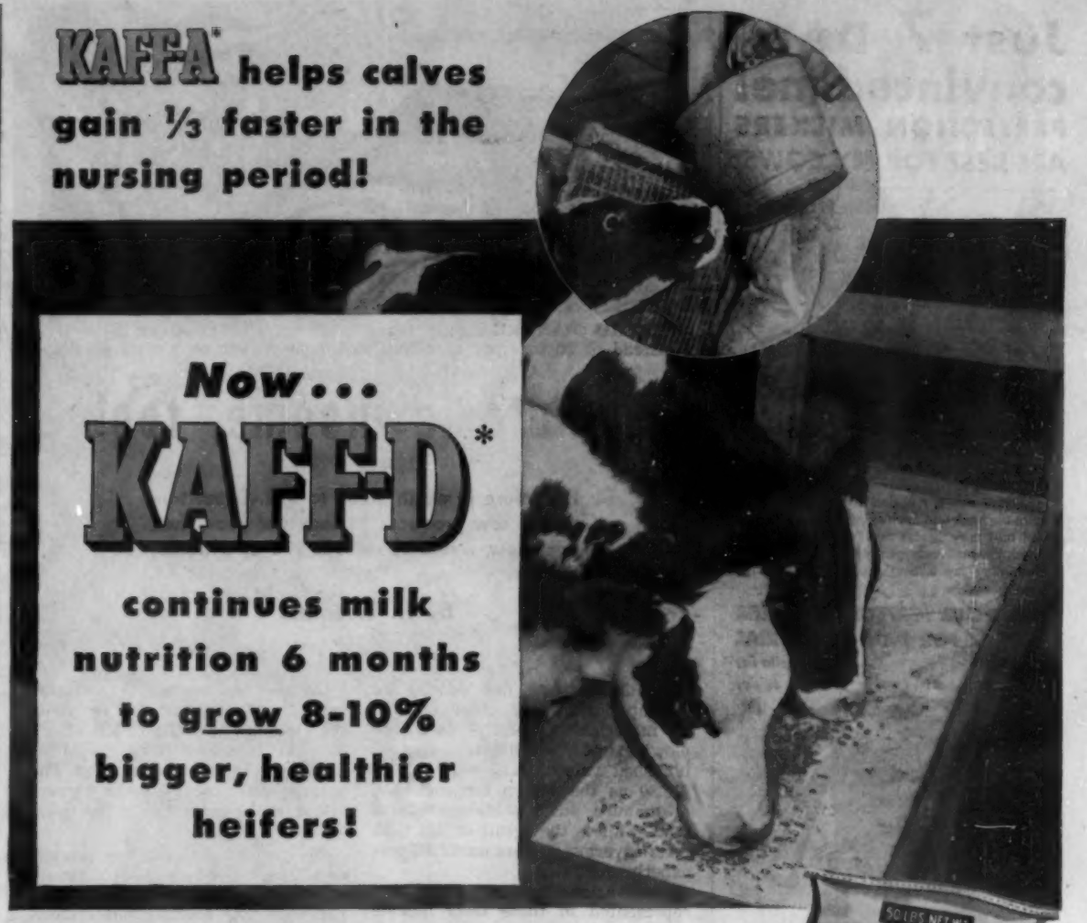

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*T.M.'s for milk by-products manufactured exclusively by Consolidated Products Co., Danville, Ill.

New KAFF-A and -D program supplies milk nutrients for less than $14 per calf!

Just 25 lbs. of Kaff-A, the safe replacement for cow's milk, takes care of the entire nursing needs of an average calf (after colostrum). A 50-lb. bag of Kaff-D pellets will grow your calves out with the same high quality milk nutrition—the cost of both is less than $14.00.

Get a pail or box of Kaff-A for your newborn calves—and order a supply of Kaff-D for your older calves at the same time. Ask your milk hauler, feed dealer, or hatcheryman today!

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SPREAD MANURE lightly for greater returns. By using 10 tons instead of 20 tons per acre, you can make 40 per cent more profit.

Manure is income, too!

If manure is worth $6.50 to $12.80 per ton, and a cow produces 12 tons per year, then each cow would contribute $78 to $153.60.

by H. J. Snider

FARM manure has proved its superiority over other organic materials generally used for plowing under on farms. It also established values from $6.50 up to $12.80 as the return for each ton of manure put on Midwest farm land. This is the result of 232 field tests covering 8 years on 22 Illinois experiment fields.

The various types of farm land represented in these tests include sandy land, light gray loams, yellow loams, brown loams, and heavy black gumbo soils, including hilly, rolling, and flat land.

It is rather safely estimated that a dairy cow of about 1,000 pounds in weight will produce around 12 tons of manure in the course of a year. At values of $6.50 up to $12.80 as the return from a ton of manure, the actual profit derived from cows on the farm is considerably more than the amounts shown in the milk checks.

On the above basis each cow would contribute from $78 up to $153.60 each year as the value of added crop yields brought about by the manure.

Prevent manure losses . . .

In these Illinois field tests the average value for manure was from $24.50 an acre on highly-productive land down to $12 an acre each year on land with a low level of productivity. The ton value as previously stated was from $6.50 up to $12.80.

These averages are substantial and fairly representative of Midwest soil conditions as each value represents a group of fields. There were 5 fields on dark, high-productive land, 7 fields on medium-productive, brown soils, 8 fields on light-colored, low-productive land, and a single field on sandy land.

On the high-productive land capable of a 90-bushel corn yield, the manure had a value of $24.50 an acre and a ton value of $6.50 based on the amounts used through a 4-year rotation. On this good land, manure was put on at the rate of 15 tons an acre ahead of the corn crop; so that each acre got this amount every 4 years.

The crop rotation in all of these tests consisted of corn, oats, wheat, legume-grass and the cash values were calculated from on-the-farm-prices for these crops.

On the medium-productive land, capable of a 75-bushel corn yield, the manure averaged $26.30 an acre in increased crop yields or $10.50 per ton of manure used. The manure was put on 10 tons an acre ahead of the corn crop in the usual 4-year rotation.

On the light-colored, low-productive land the value of manure proved to be $16 an acre or $12.80 per ton. The amount put on was approximately 5 tons an acre ahead of the corn crop.

Manure used on sandy land had a value of $12 an acre and also $12 per ton based on the slightly less than 4 tons an acre put on once in a 4-year rotation.

Add 4 to 15 tons . . .

Differences in amounts of manure added each acre was due to the fact that the productivity of the land determined the amount of manure produced when all feed crops were used either for feed or bedding. The highly-productive soils gave crop yields which allowed the return of 15 tons for the 4-year rotation. On this basis medium-productive land got 10 tons; low-productive land got around 5 tons; and sandy land received slightly less than 4 tons an acre.

This arrangement put the manured land on a more comparable basis to the plan where crop residues including legumes were plowed under for soil improvement. Highly-productive land would certainly produce more stalks, straw, and legumes to be plowed under than would land in the lower brackets of fertility.

Comparisons of manure with crop residue-legumes show the manure treatment to be considerably ahead in crop yields. Manure, limestone, and phosphate on highly-productive land gave a corn yield of 99 bushels compared to 91 bushels an acre for the residue-legumes plowed under also with limestone and phosphate. This was a gain of 8 bushels in favor of manure.

Showed lasting qualities . . .

Frequently on good land two corn crops are grown in succession, like a corn, corn, oats, clover rotation. In such a rotation manure averaged 95 bushels in the second corn crop and the residue-legumes averaged only 72 bushels under comparable soil conditions. Manure showed more lasting qualities and prevented the more than 23 bushels drop in the yield of the second corn crop.

Manure with limestone and phosphate, on light-colored soils, gave a corn yield of 77 bushels compared to only 48 bushels for the residue-legumes also with limestone and phosphate. These light-colored soils were low in potassium or potash and manure supplied enough for the needs of the corn while the residue-legumes apparently did not furnish enough. Here is where the soil test must be used in order to determine such soil deficiencies in advance.

Manure, limestone, and phosphate on sandy land gave a corn yield of 64 bushels as compared to 52 bushels for the residue-legume plow under, also with limestone and phosphate. In this test, manure averaged 12 bushels the better and no doubt the extra potash in the manure helped to account for a large part of the difference. Also the more lasting qualities of the manure throughout the 4-year rotation had an influence on this sandy soil.

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Sims to Canada

John Sims, fieldman for the New York State Guernsey Breeders' Cooperative since 1946, has accepted a position with the Guernsey Cattle Breeders' Association of Ontario with headquarters at Guelph, Ontario, Canada. He will be in full charge of their operations.

Join New Jersey staff

Dr. James Lee Cason, formerly a member of the University of Arkansas dairy department, who just received his Ph.D. degree from North Carolina State College joined the dairy staff at Rutgers University, July 1.

He replaces Bruce Poulton, who has accepted a position at the University of Maine. Cason attended Louisiana State and received his Master's degree at Michigan State.

Dr. Carol Ramage, who has been at the Dairy Research Farm three years, just received his Ph.D. degree at Rutgers, and will stay on to teach and carry on research in feeding highly-fertilized grasses.

Bill Baumgardt, a Purdue graduate, will coach the Rutgers dairy judging team, along with other duties of research and teaching. He fills the vacancy created by Frank Wright, who went into extension work.

Ohio Dairy Day

Research reports on dairy cattle diseases, discussions of pastures, and talks on silage will highlight the 29th Annual Ohio Dairy Day at Wooster, Ohio, Friday, August 10. There will be a special program for the ladies as well as activities for young people.

The day the tester comes

The cows are in a shady place,
(The day is sultry hot)
Not even lured by tender grass
To leave their comfort spot.

The water tank seems far away,
And their ambition lags;
They're more concerned with idle ease
Than filling up their bags.

The pesky flies chew constantly
On men and cows alike;
And, though the men work as they swat,
The cows are on a strike!

The ones which last week filled the pail
Now this week seem near dry;
And though the milker tugs and pulls,
The cows won't even try.

Between the rains—between repairs—
The men put up the hay;
It's bound to rain again and then
There'll be some more delay.

The morning milking was quite late—
(The farmer overslept)
Besides all else, there's feed to grind;
Someone had better step!

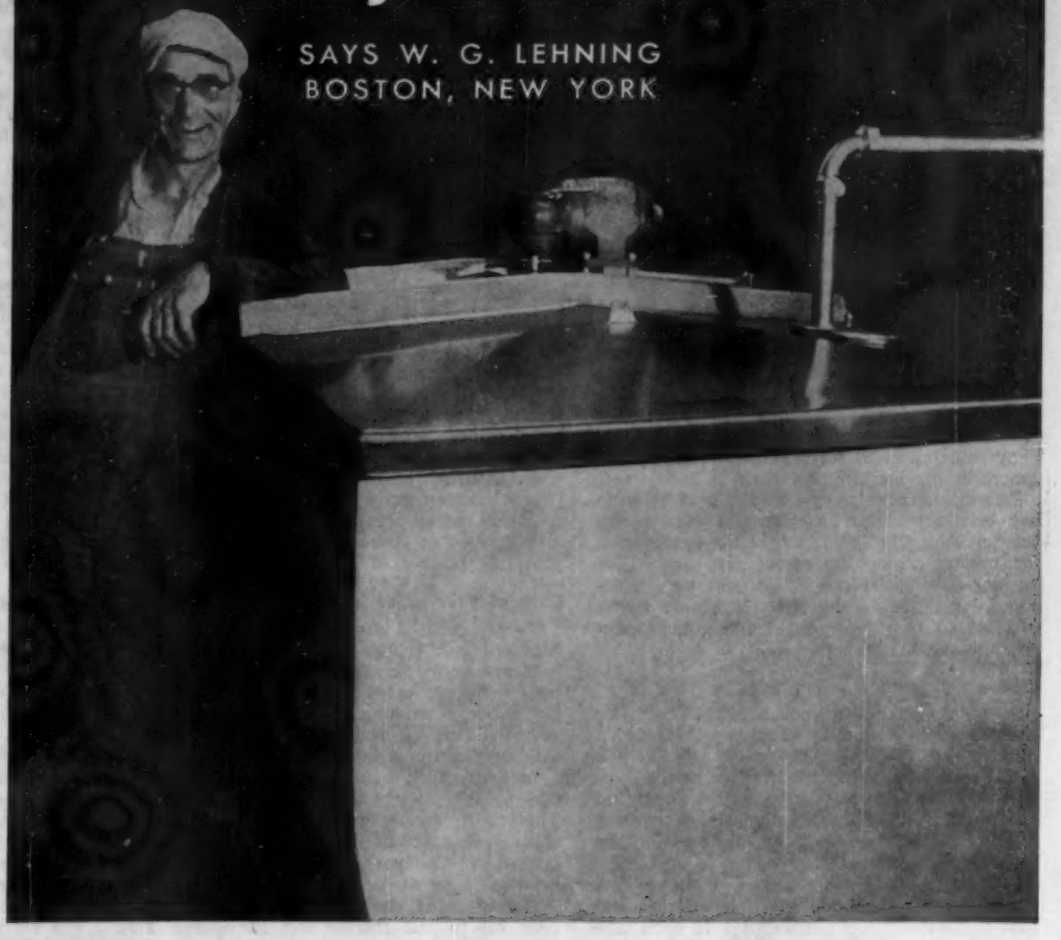
A salesman comes and wants to talk—
Has nothing more to do;
A fence breaks down and calves get out—
Emergencies anew!

What day is this? So trouble-filled
It seems to be all thumbs.
Why any dairy farmer knows
The day the TESTER comes!

—Frances B. Koehler

"I make $120 a month extra with my bulk milk tank"

SAYS W. G. LEHNING
BOSTON, NEW YORK



Mr. Lehning has kept a good set of records since he installed his Stainless Steel bulk milk tank in October 1953. First, he earns a 10¢ per cwt. premium from the dairy because of his bulk milk system. His butter fat average is up from 1 to 1½ points—and he gets seven extra cents per point.

But there's more to the story. Since he changed to bulk handling, Mr. Lehning estimates that he saves about 5¢ per cwt. because of reduced stickage. He saves about one hour per day of hard labor, and his bacteria count is *one half* of its previous average (it's now running about 10,000).

Mr. Lehning is currently milking 46 Holsteins; and, with his $120 a month savings, his 400-gallon bulk milk tank will pay for itself in less than three years. After that, the tank earns pure profit.

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UNITED STATES STEEL

DAIRY FARM HOME

How to buy and care for PAINT BRUSHES

by Margaret Speers

GOOD paint brushes are expensive—but a sound investment. A good brush will hold a large amount of paint, carry it without dripping, paint without spattering, put on a smooth coat, and cut a clean edge—things a poor brush will not do. A good brush can be cleaned again and again. With proper care, it will last for years.

How to choose a brush . . .

Basically brushes are of three types: Pure natural bristle, pure synthetic bristle, and mixtures of natural and synthetic bristle. The pure bristle brushes are the superior ones.

In the natural bristle group, pure Chinese hog bristle brushes are the very best. Cheap brushes are usually made of horsehair and can be used only a comparatively short time before they begin to deteriorate.

Genuine badger and skunk bristle brushes are available also and are of good quality. They are, however, soft bristle brushes, used generally for lacquer and varnish.

Running a close second to the best genuine hog bristle brushes are those of pure nylon bristle. Actually the nylon brush is superior for use in water-thinned paints because of its non-absorptive properties and its resistance to alkaline solutions. However, nylon will soften in shellac or alcohol and should not be used in either.

What to look for . . .

How can you tell a good brush? There are several ways. Begin by checking the brush's construction. A well-made brush will have a metal ferrule securing the bristles to the handle, and the ferrule will be **nailed firmly** to the handle. The bristles themselves will be firmly anchored in rubber or some other tough adhesive.

After checking construction, make a few simple tests. First, spread the bristles and pull them away from the center to each side to make sure they are firm and at the same time resilient. Also, the bristles should feel springy and elastic when you press the brush against the back of your hand.

Next tug at the bristles to determine whether the brush has a firm strong setting. If more than a couple of bristles come out, it's poorly made.

In an animal bristle brush look for "flags," as split ends are called. Hold the brush with bristle up and spread the ends of the bristles between your fingers. The more split ends the better, for they aid in holding the paint.

Next check the plug strip or base plug which is in the heel of the brush. Open the bristle down the middle with a knife or other flat object to reveal the base plug. A good brush should have **two thin plugs** made of either metal or wood.

Also separate the bristles and look at them closely to find out whether they are of different lengths. A good brush contains a mixture of long and short bristles.

Other things to check: Bristles should toe in, not flare out; the edge of the brush should make a sharp even line when pressed on a smooth surface; if it is a chisel-edged brush, its tip should feel silky to the touch.

As to brush size, one general rule applies: Use the widest brush practicable for the job; it means fewer strokes, saves painting time, and results in a smoother job. See photograph at bottom of page.

Care of your paint brush . . .

Proper care of a paint brush should begin before it ever touches paint.

First remove the few loose bristles that are not anchored; most new brushes have some. Do this by twirling the handle rapidly between the palms of your hands. Or beat the bristles rapidly across your spread fingers.

Secondly drill a hole in the brush handle, one to two inches above the metal ferrule. This is to enable you to slip a stiff wire through the handle so the brush can be suspended in a can without resting on its bristles.

Before using the brush, suspend it in linseed oil to the ferrule for 12 hours. This adds to the life of the brush and makes paint removal easier later on. When you remove the brush from the linseed oil, squeeze out as much oil as you can by laying the brush flat on a smooth surface and pressing down on the bristles with a smooth stick. Rinse the brush in turpentine; now it is ready to use.

Always clean a paint brush before putting it away overnight. Pour a little solvent on the brush and work out the paint on a newspaper or board. Then suspend the brush up to the ferrule in solvent overnight. Make sure the bristle ends do not touch the bottom of the can. Work out the thinner before painting again.

Clean a brush thoroughly when you are ready to store it. A natural bristle brush that has been used in oil paint, enamel, or varnish should be soaked well in a solvent or cleaner, preferably overnight. Work out the paint on a newspaper making sure to get the cleaner well up into the heel of the brush. Remove any paint flakes with a blunt putty knife; rinse bristles in clean solvent. Then scrub the bristles on a board with hot water and laundry soap to remove remnants of paint and solvent. Rinse in clear warm, then cool, water. Shake out excess water. Comb out bristles with an old comb. Then return brush to original wrapper for storing or wrap in heavy paper.

Nylon brushes are cleaned by the same methods used for natural bristle brushes with one exception: You must use a cleaner that **does not contain tar acid.**

Brushes used in water-thinned paints should be cleaned by immediately washing thoroughly in warm, soapy water. Rinse thoroughly and let dry.

Other care for longer wear . . .

- Never let a brush rest or stand on its bristles even for a short time.
- If you wish to **store wet** for several days a brush used in oil-paint or varnish, work out excess paint; then completely immerse the bristles in a mixture of one-half raw linseed oil and one-half turpentine.
- Never keep brushes in water, and don't leave them standing in cheap thinner like benzine for long periods of time.
- Do not dry out brushes on a radiator.
- Don't poke a large brush into corners.
- Don't paint with a brush edgewise—this causes it to "finger."

THE END

—Photographs courtesy Pittsburgh Plate Glass Co.

DIP BRUSH ONLY half the length of the bristles. Tap tip of brush against inside of can to remove drip. Do not wipe sides on edge of can; this removes too much of the paint.

THE FOUR BRUSH SIZES shown are usually all that are needed for most household painting jobs. The brushes pictured from left to right are the 1½-inch flat trim and sash brush for window sashes, borders, and edges; 2-inch flat varnish brush for painting furniture, doors, and shelves; 3½ and 4-inch flat wall and general purpose brushes for painting large, flat surfaces.

From Day to Day

by Lois J. Hurley

DO, OR did, you watch with both fear and fascination as your chick, or chicks, began to spread their wings and make wider circles than the home orbit?

I expect every mother feels a tug at her heartstrings as the children begin to grow up. In my own case, with only one child who didn't make her appearance until I was 39, I'm aghast at how fast time flies by.

Though it was 10 years ago, it seems only yesterday that I brought her home, a little six-pound mite, not any bigger than a good-sized beef roast. Surely it couldn't have been six years ago next month that I took her hand and led her off to kindergarten.

But it was. Now Camp Singing Hills has entered her life and afforded her the first taste of being away from home. She swims, sings, plays the piano, likes be-bop records, cooks supper, and gets more telephone calls than I do. Occasionally she is sassy and ornery and gives every indication of thinking her mother is a hopeless old fogey who might as well not voice an opinion about anything because it is worth so little.

In short, she's just like your 10-year-old and we wouldn't really want it otherwise, would we? But aren't those bedtime conferences precious and the spontaneous kisses and squeezes something to be really treasured?

We are wealthy . . .

Did you know that you are the richest and most efficient woman in the world and that not even the Queen of Sheba had as many slaves at her disposal as you?

Collectively, we American homemakers own and operate 500,000,000 household appliances, the small housewares alone of which total 30. These include blankets, blenders, bottle warmers, broilers, clocks, coffee grinders, coffee makers, corn poppers, egg cookers, fans, food mixers, hair dryers, heating pads, hotplates, ice cream freezers, ice crushers, irons, juice extractors, knife sharpeners, massagers, meat grinders, portable heaters, roasters, sandwich grills, shakers, skillets, toasters, vaporizers, vibrators, and waffle irons.

All told, we have 60 slaves to do our bidding at the flip of a switch or the push of a button. Theoretically, these willing slaves replace muscles, frown away bending, carrying, stooping, and lifting and save us 60 working days every year which means that we should be able to find time for a three-month vacation, if we work a five-day-a-week, eight-hour day.

Breaking our leisure down into specifics, a test was made last summer of just what a clothes dryer does for us, over a 24-day period when a team of women hung clothes on the "practically pre-historic" clothesline, to quote direct from the article containing these facts and figures.

Out of the 24 days, it rained on five and on nine it was too cloudy for the clothes to dry. Three times the clothes had to be rehung because of being caught in a sudden downpour. Loaded with wet, heavy clothes, the clothesline broke 10 times and had to be raised by a little woman who weighed only 100 pounds and was so short the sheets dragged on the ground. There was one bad tumble down the cellar steps with a loaded clothes basket.

All of which led to the estimation that a clothes dryer will save us over 400 hours of drudgery, lifting a 4,000-pound mountain of wet clothes, 40 miles of walking, and 203 very unladylike expressions!

All of this proves, of course, that if you spend enough money and devote enough time and thought to it, you can make figures prove anything. I haven't any clothes dryer; yet my clothesline hasn't broken in years. I haven't been caught in anything more drastic than a light sprinkle and I have never fallen downstairs with a clothes basket. This doesn't mean I never will, and I'm not arguing against clothes dryers. I'll probably have one sometime, but I'm just talking along about what figures can do for you with a little finagling.

I'm glad as I can be that we own 39,000,000 washing machines, 47,000,000 ranges, and 46,000,000 refrigerators. I wouldn't part with a one of our 26,000,000 water heaters, or 30,000,000 vacuum cleaners.

But, with all the gadgets they've made and sold us and all the freedom (?) we've gained, there's still one job that I simply hate and nothing automatic has yet been discovered to do it. That's filling the salt shakers! The way I've worked it out, I've substituted 10-year-old labor for automation and it's one of the jobs that Kathy does to earn her 50 cents a week!

Cool dessert for hot days . . .

Out of our dairy state comes this cheese cake recipe that sounds especially good as a hot weather special. It can be made ahead of time, as it takes slow cooling before serving.

Roll **15 graham crackers** fine as heavy sugar and mix with **½ cup sugar, ½ cup melted butter, and 1 teaspoon cinnamon,** if desired. Pat them into a thick crust around the sides and bottom of a 9-inch spring form pan with removable bottom or deep cake pan, reserving enough crumbs to sprinkle on top. Set aside while you prepare the filling.

Beat **4 eggs** and add **1 cup sugar** gradually, beating until lemon colored. To this add **½ cup light cream, ½ teaspoon salt, 4 tablespoons flour, 2 tablespoons lemon juice,** and **1½ teaspoons grated lemon rind.** Add **3 cups sieved cottage cheese,** and blend together thoroughly.

Pour filling into crust and sprinkle crumbs over the top. Bake in a pre-heated 350-degree oven 1 hour. Cool thoroughly before removing from the pan.

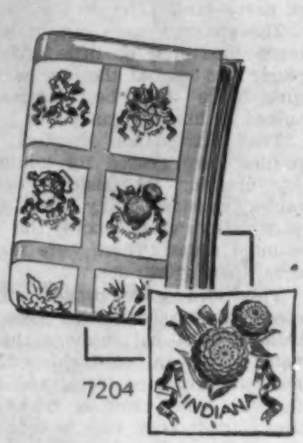
Zwieback, ginger snap, or vanilla cookie crumbs may be substituted for the graham crackers. Use moist, fine-curd cottage cheese if available; otherwise buy country-style cheese. Be sure and sieve it to remove lumps. **Orange, vanilla, or almond flavoring** may be used instead of lemon, if preferred. The cheese cake may be served plain or topped with **berries, toasted cocoanut, toasted almonds, shaved chocolate, or whipped cream,** just before serving.

7122. She's a child's handy helper—a big 32-inch doll to hang on wall or door. Hides laundry inside her skirt and holds shoes in pockets. Includes embroidery transfer, pattern, and directions for "laundry-shoe-bag" doll.

500. Luxurious milk-glass effect achieved by simple crochet. Jiffy-crochet bowl and doily 13 x 8 inches or doily alone, 9 inches. Use heavy 4-ply jiffy cotton; starch stiffly.

7204. The pride of every state—its own flower—embroidered on this cozy quilt. Diagrams and transfers of embroidery motifs included. Quilt 72 x 102 inches, double-bed size. Each square, 7 x 8 inches.

7338. The graceful bird-and-rose design of this elegant chair-or-buffet-set is formed by filet crochet. Charts and directions for set in No. 50 mercerized cotton included. Chair-back 13 x 16 inches; armrest 6 x 12 inches.



7289. Crochet this flower-effect doily to use as a centerpiece. Crochet doily 21 inches in No. 30 mercerized cotton; smaller one to match.

7280. Brighten kitchen towels with these colorful "bird" motifs. Set of seven different bird motifs; easy, gay embroidery. Transfer and instructions included.

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Let's go on a picnic

Plan an "old-fashioned" picnic that children, as well as adults, can enjoy. It may bring back memories of your childhood.

Helena Davidson

"MUST we make such a production out of a picnic?" said Dave as we unpacked the lunch basket. We had just come from our annual Farmers' Club picnic at which 15 families had provided 15 baskets of party fare.

The children were out of sorts from too much food and too little activity. Our club picnic was held at the city park, so the little girls wore their best dresses, while Tim sulked in his new tan pants.

That started me thinking. Perhaps our picnics were geared for adults. Adults enjoy dressing up, visiting over the picnic tables, wandering idly about the landscaped park. But what about the children. We counted noses. There were many more children than grown-ups.

This idea was brought up at our next meeting. Faced with the knowledge that the children were not enjoying these outings, we voted to try an "old-fashioned" picnic. Many mothers presented ideas, and the dads came up with some camping tricks of their own. Jim Hanson knew how to cook food in aluminum foil and Ben Aldrich explained the proper way to build a camp fire for cooking.

These days we outfit our children in shorts or jeans and wear our own old clothes. We hike, or visit, or hunt for odd shells along the lake shore while the children play ball or climb trees. Our food is hearty, but simple, and often is prepared on the spot. This is the time to eat your fill of tender sweet corn uncomplicated by cutlery and etiquette. If someone catches a mess of fish, it is fun to clean them and cook them over campfire coals. We recapture some of the excitement of our own childhood. Remember the potatoes baked in the spring bon-fires, charred on the outside, mealy and tasty inside?

Sweet Corn over Coals

Turn husks back; strip out corn-silk; then tie husks back in place. Dip ears in cold, salty water. Place ears on grate over hot coals. Turning ears occasionally, roast 10 to 15 minutes until the husks are dry and brown. Remove husks and serve with butter, salt, and pepper.

Campfire Potatoes

Place 2 or 3 potatoes in a tall juice can. Place a larger can over the top for a cover. Place on coals and cover with more coals and hot ashes. With a poker or pliers, turn the cans during baking. When they are tender (30 to 40 minutes) remove from can; slit skin; and add butter, salt, and pepper.

Main Dish in Foil

Use squares of locker foil or double thickness of household foil. On each, place a hamburger patty, several slices of onion, thin slices of potato, and carrot. Season with salt and pepper. Seal securely to make a tight package. Place on grill or directly on coals for about 15 minutes until done. Fold back the foil and use as a serving plate.

Fish in a Hurry

Clean and fillet the fish, or cut into thin steaks. Place each piece on a square of foil. Squeeze on lemon juice. Add a few onion slices, salt, pepper, and butter. Fold the foil securely closed and place on the grill close above hot coals. Cook about 30 minutes, or until the fish flakes easily with a fork. Serve in the foil "dish."

Wieners and Kabobs

Peel long, slender green sticks of sweet wood. Point them at both ends, or find sticks with one forked end. (These prevent your food from slipping into the fire almost as it reaches the eating stage). The sweet woods include birch, apple, poplar, basswood, and maple. Avoid the woods with a bitter or resinous taste as they impart their flavor to the foods cooked on them.

Place thin cubes of steak, thick onion slices, potato slices, bacon, or whatever else you choose, alternately upon the sticks. To avoid holding your stick over the fire until the food is cooked, anchor one end of the stick securely between stones or stick one end into the ground at an angle so the food will be directly over the coals. Remember to turn the stick occasionally so all sides cook and brown evenly.

Biscuits on a Stick

Prepare your favorite baking powder biscuit dough, or use the packaged kind. (Remember, this is your take-it-easy-day). Make long, thin rolls about the size of a clothespin and wrap spirally around your peeled, green stick. Secure the ends by overlapping and pressing firmly together. Roast as you did the kabob. The outside will be a deep brown when the inside is baked. Split open; butter; and eat while hot.

Campfire Coffee

A gallon sirup pail is fine for making coffee. Fill it with water; cover; and when it begins to boil, add the coffee which you have tied in a cheesecloth bag. Boil for about a minute and settle with a dash of cold water. If you must use your coffee pot on the grill, rub the bottom with soap for easier washing afterwards.

If you do not care to boil coffee, use the instant kind. Each person can have the strength of coffee he prefers in this way.

Dessert

Of course, you may bring a meringue pie or chocolate cake with icing, but fruit will be as satisfactory and require no utensils for eating. Crisp red apples, bananas, bunches of grapes, or juicy peaches will pleasantly end your meal.

The campfire is the heart of your picnic, and the success of your meal will depend on whether or not it is a good one. Gather small, dry twigs, bits of birch bark, or dry chips to start your fire. If kindling is scarce or damp, a "fuzz-stick" may be made by cutting a small stick into shavings, leaving the shavings attached to the stick. Pile your small wood on this and light. When the fire is going, add larger split pieces, and finally your "hot" wood. Hickory, green or dry, chestnut, oak, pecan, iron-wood, apple, birch, maple, or yellow pine burn hot and long, settling into a bed of lasting coals that will be right for cooking.

The children will enjoy hunting for twigs and kindling. It gives them a feeling of helping with the preparations and is an excellent chance for them to study nature.

Some picnic places provide simple grills for outdoor cooking, but you can easily improvise your own. We have used the oven rack from a discarded wood range and a wire shelf from an old ice box. Rest the edges on several flat stones.

You can pile twigs and split wood in a pyramid and set an upright stake into the ground on either side. These may be forked or notched to hold a cross pole and the coffee pail strung onto this by its handle. If you do "stick cookery" at this kind of a fire, the grill may be dispensed with.

Before you start a fire, scrape a spot bare of leaves, dry grass, or chips. Select a location where the wind cannot carry the flame into brush or grass. A circle of stones about the fire site will make an additional precaution against fire spreading.

It is a convenience to have a basket or a covered box filled with picnic supplies. If this is re-stocked when it is used, one can go picnicking on short notice. The basket should contain salt and pepper, coffee, soap, paper plates and cups, napkins and paper towels, aluminum foil, inexpensive cutlery, plastic table cloth, matches, a sharp knife, canvas gloves, a bottle and can opener, a coffee pot or pail, a pail for ice, clean rags, an insect bomb, and a sharp hatchet.

If you prepare a hot dish, wrap it in several thicknesses of newspaper. This will act as an insulation and the food will be warm several hours later. Beware of dishes containing cream fillings and any that will spoil quickly without refrigeration.

A pail filled with ice will hold several bottles of cold drinks or half-pints of milk for the children. Unless you are sure the supply of water at your picnic ground is safe, it is best to bring your own water for drinking.

Before you leave, be sure the grounds are clean. Pick up and bury the bones, the bits of foil, and the apple cores. Pour water over the campfire when you have finished cooking and again before you leave. Be sure there is not a single spark left for the wind to fan into a flame.

Now it's time to leave for home. Perhaps Dad will say it, or one of the kids—"Wasn't that fun? Let's do it again next week."

THE END

POULTRY

Joe W. Sicer

Promising pullets deserve more than a promise

Pullet housing time should be the signal to check laying house and management practices.

WHAT better time is there than pullet housing time to make the laying house improvements you have been promising yourself and your flock?

First, there is the simple matter of running water.

Every 100 hens need about 10 tons of water a year. That's a lot of water for somebody to tote. It takes time that could be spent to better advantage in other ways. In these days of plastic pipe, installation is simple and economical.

If you value your time at only 75 cents an hour, and running water can save you only 10 minutes a day in your laying house, you will be repaid in 6 months for the cost of piping water 100 feet.

There are many different watering devices for layers, but the most satisfactory one I have seen uses a 12-inch diameter sewer tile with a small, constant-flow or automatic fount in the center of the tile. Because the birds must reach far in over the tile to drink out of the small fount and because the jump board around the tile is of such a size to make the birds stand up close, most of the water that drips off of the beak and wattles falls down the tile instead of getting the litter wet.

CONSTANT-FLOW FOUNT provides clean, fresh water at all times with a minimum amount of wet litter. Bottom of tile, concreted into sewer, handles waste water.

Would you walk 100 miles?

Then there is the matter of having feed bins in the laying house. Built-in bins that can be filled off a truck from the outside and the feed removed from the inside of the house are fine. But just covered metal drums will help.

I once made a "time and motion" study to determine the amount of time and the number of steps poultry raisers required to tend their laying flocks. Well do I recall the one flock of about 300 birds where all the feed was stored in the barn about 200 feet away from the laying house!

The barn had excellent bins in it for grain storage. The laying mash was set off there, too, because it usually came on the same load with the dairy feed — very good reasons. But it was 160 steps out to the barn and back to get the oats for the morning feeding. It was the same distance for a trip to get mash to fill the troughs and again to get mash for the noon wet mash feeding.

I've heard of folks "walking a mile" for a certain brand of cigarettes, but that lady was walking more than 100 miles a year for the lack of feed bins in the laying house!

Where are your nests?

Nests should come in for attention, too. Gathering eggs is one of the most time-consuming jobs with a laying flock. Regardless of whether you prefer conventional wall nests, community nests, or roll-a-ways, give some thought to where you put them. You can't bunch them together too much, but you can have most of them fairly close to the door you use.

The nests the pullets use before they are housed should be the same kind you expect them to use later. Chickens are creatures of habit. Change the nests and they are likely to lay on the floor.

What about re-using litter?

Before housing pullets is the one good opportunity to give the laying house its annual cleaning. It is not an absolute must, but it is sound practice. Many good poultrymen re-use the same litter when the old litter is dry and loose and there has been no serious outbreak of bacterial disease in the flock. The old litter will stay drier than new litter. But by re-using, you lose the opportunity to clean and disinfect the house and your land doesn't get the benefit of the fertility value of the old litter.

In either case, you should paint the perches (yes, I still like them) with anthracene oil to keep rid of red mites.

Good ventilation is a must . . .

Finally, make certain ventilation is adequately planned. Without good ventilation you might just as well quit.

You may be able to use open fronts, slatted sides, ridge ventilators, tilt-in windows, fans, flues, or you may even have one of the new windowless houses with complete mechanical ventilation, but deliver that fresh air. Don't just promise it to those promising looking pullets!

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says
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R. 1, Middleton, Wis.

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YOUNG DAIRYMEN

BASIC FARM PRACTICES

Be sure to keep records

GOOD dairymen are good businessmen. Records are an important part of every successful business and dairying is no exception. The very basis of a successful feeding, breeding, and management program is a good set of record books.

Dairy herd records require careful planning and take time, but rewards are high.

It is wise to have one record book in the barn where you can write down things as they happen. A more permanent, neater record should be kept in the house and frequent transfer made from the barn book to this permanent record book.

Start by identifying the animals. Calves should be identified shortly after birth. Color pattern sketches work well for broken color breeds, and the ear tattoo is a permanent identification for the solid color breeds. Eartags or neck straps with numbers attached are also used. Purebreds require the sketch or tattoo for registration.

Health, breeding, and production records are all important. The breeding record includes calving dates, estrous or heat periods, dates bred, sire used, and estimated calving time. Only then will you know when to check the cow for heat and be able to plan the calving interval and dry period. This means we should know that cows have a gestation or calf-carrying period of 281 days and an estrous cycle of 20 or 21 days.

It is good management to plan for a calving interval of 12 to 13 months for most profitable production. A good rule is to breed the cow at the first heat period following 65 days after calving. Her reproductive tract will then have time to return to normal following calving, and she could be milking about 10 months with a 6- to 8-week dry period between lactations.

FATHER AND SON work together to keep a good set of records on their dairy operation.

Running a dairy herd without production records is like starting a long trip without a road map. In either case it would be wasteful of time, money, and effort.

—R. P. Niedermeier
—J. W. Crowley

Provide enough self-feeder space

THE self-feeders on your farm can save feed and labor. A good serviceable feeder provides feed at all times to speed gains, and put your hogs on market earlier.

You can use self-feeders from the time you start creep feeding young pigs until they go to market. You can also self-feed your breeding herd a large share of the year. The National Research Council of Washington, D. C., recommends that the number of pigs per self-feeder hole should be:

	on dry lot	on pasture
Weaning to 75 pounds	4	4 - 5
76 pounds to market	3	3 - 4

To start feeding the 7- to 10-day old baby pigs, you can use a common flat feeding trough (a 12- to 15-inch pan) placed under the heat lamp in the pig brooder. A handful of feed will be enough the first few days to get the little pigs started. When the pigs are 2 to 3 weeks old, use a feeder similar to a trough with cross bars every 6 to 8 inches to keep the pigs from lying in it or rooting the feed out. This feeder will work well until the pigs are ready to wean.

A 4-foot trough feeder will work best until the pigs weigh 40 pounds or more. For each 2 litters of 15 to 20 pigs, provide 1 feeder.

When your pigs reach weaning weight, they are ready for large self-feeders.

The following table will help you determine per cent of self-feeder space for protein:

Live weight of pigs	on dry lot	on pasture
	per cent	per cent
Weaning to 75 pounds	25	20-25
76 to 125 "	20	15-20
126 to market "	15	10-15

You may have a separate mineral compartment on each feeder, or a separate mineral feeder for all the hogs.

The feed capacity of the feeder should be considered when you buy or make one. Too small a feeder doesn't allow you to make efficient use of time or labor. A growing pig may be expected to consume the following amounts of feed daily as shown in the table below.

	Total daily feed
Weaning to 75 pounds	2.7 pounds
100 "	5.0 "
150 "	6.6 "
200 "	7.5 "

Self-feeders should be placed on platforms located where they can be filled from outside the lot, if that is possible. You can save considerable time by the proper arrangement of the feeders.

—F. J. Giesler

BARNEY FARMLAN

"He'll be the fattest hog in 4-H. It's hooked into the milk pipeline."

Kill quack grass

QUACK grass is a troublesome weed because it is persistent and hard to control. Heavy infestations in corn require frequent cultivation. Quack grass in small grain reduces the yields.

A heavy-duty spring-toothed cultivator is the best implement for controlling quack grass in the field. It is killed most easily by drying out the roots. The best time to do this is the drier and warmer part of the summer, usually August and September. Old hay fields and pastures that are to be broken up are good places to start this type of cultivation. Infested fields should be cultivated once a week during dry periods.

Chemicals look promising in the control of quack grass, especially during wet seasons, when cultivation will not be effective.

Dalapon lends itself to wide-scale control of quack grass. Apply five pounds of dalapon per acre in early spring when the quack grass leaves are four to eight inches high. One or two weeks after treatment the treated area should be plowed under. Corn and soybeans should not be planted until about four weeks after treatment.

Dalapon may also be applied during the fall months if a good shoot growth of quack grass is present. Applications of 10 to 15 pounds per acre are recommended.

An application of 5 pounds per acre in spring will cost about $5. Fall treatment will cost $10 to $15.

(For more information see "Kill quack grass with dalapon," Hoard's Dairyman, May 10, 1956, page 471.)

Spots of quack grass can be eliminated by treating with ½ pound of TCA per square rod. Most crops will be affected for several months after this application. Quack grass in gardens may be treated with maleic hydrazide. This chemical is applied to the quack grass leaves in the spring just before the soil is worked up and planted. There is no danger of soil toxicity. —K. P. Buchholtz

Plant a raspberry patch

MANY raspberry growers prefer to grow their own plants. The following tips may reduce failures.

Red raspberries send up new canes from the base of the old canes, but they also send up suckers from underground roots. Red raspberries can be propagated by digging the strongest of these sucker plants early in spring or late in the fall.

These plants must be dug before growth starts. They can be set directly in the field or grown in a nursery row for one season. Another method of propagation is to carefully dig the old roots and set them out immediately. This method requires watering frequently; often the plants must be shaded.

In order to produce new plants of black and purple varieties, the canes are bent over and the tips are buried in a trench at a depth not to exceed four inches. This should be done when the canes are growing rapidly. The best period is generally in August when the ends of the canes droop to the ground. It is at this time that the canes will develop roots rapidly when covered with moist soil. By the following spring the tips will have rooted. The canes should then be cut, leaving about eight inches of cane. The plants can be set in the field and the remaining cane cut off at ground level.

In order to produce many side branches that can be buried to produce plants, the tips of black and purple varieties can be pinched off when the new canes are 12 to 15 inches high.

If you propagate your own plants, be prepared to set them out as soon as they are dug. If you purchase plants that have been propagated by a nurseryman, be certain they have been inspected.

—G. C. Klingbeil

GI farm training offered to veterans of Korean War

Allowances vary from $95 to $130 per month for Korean veterans enrolling under GI Bill.

ON-THE-FARM training is a combination of classroom instruction plus supervised training on the farm.

Following are the requirements for GI farm training as explained by the Veterans Administration in answer to many questions.

What type of farm?

The basic activity of a veteran's farm must be the cultivation of the land—such as raising and harvesting crops, fruits, vegetables, and pastures. Or, it must be feeding, breeding, and management of livestock or poultry. Or, it may be any other specialized farming commonly followed in the area.

The basic activity, however, may not be the processing, distribution, or sale of agricultural products such as a dairy processing plant, a grain elevator, packing plant, florist shop, or the like.

How large a farm?

The farm must be large enough so that, together with the classroom portion of his course, it will take up his full time.

Also, it must be large and varied enough for him to put into practice the farm operation and management techniques he is taught and it must assure him a satisfactory livelihood, at least by the end of his program.

Must veteran have control?

Yes, the veteran must have full control of the farm so that he will have a free hand in carrying out the farming methods he learns.

He may own the land outright, or lease it, or have a management agreement, or some other tenure arrangement.

Who approves?

Each veteran's individual farm training program must be approved by the appropriate approving agency of his state.

State approval is granted individually, rather than on a mass basis, because farm training programs are tailor-made to suit the needs of each individual veteran-farmer.

How long may veteran train?

There is an "outer limit" and an "inner limit" that a veteran must keep in mind.

The "outer limit" is his basic entitlement, as established by the law. This is based on 1½ times his length of eligible service, up to a maximum of 36 months of training.

Within that "outer limit" there may be an "inner limit" — the length of time necessary for the veteran to reach his objective. This is determined individually, and depends upon his own needs for training, the nature of his farming operations, his previous experience and other factors.

How to apply . . .

A veteran applies at his nearest VA regional office. He must submit the following papers:

A completed application form (VA Form 7-1900); a photostat or certified copy of his separation paper; a detailed outline of his training program as set up by his school; a certification from a school official stating that the program meets all standards of the law; and evidence that the veteran has control of the farm and that the training program will occupy his full time.

What is in the course . . .

The course includes at least 200 hours per year of classroom instruction in farming and related subjects, with not less than 8 hours in any one month.

It also includes at least 100 hours of individual instruction per year, with at least 50 of the hours taking place on the veteran's farm. A veteran's instructor is required to visit him twice a month.

What GI allowance?

During his first year of training, a veteran-farmer will receive $95 a month if he has no dependents; $110 if he has one dependent, and $130 if he has more than one dependent.

After the first year, the allowance will be reduced, at 4-month intervals, as the veteran progresses in his training.

When are allowances paid?

The veteran will get his monthly allowance some time after the end of each month of training completed. But, before VA can pay him, it must receive a certification, signed by the veteran and his school, that he actually was taking his course during that period. Normally, a veteran's check should go out within 20 days after the time the VA gets the certification.

Can GI trainee hold outside job?

The law requires that a veteran's farm training course occupy his full time.

He may take on up to 180 hours of outside employment during any 12-month segment of his enrollment period, so long as his school finds that his employment does not interfere with his training.

But he may not work for more than 180 hours during any 12-month period.

Day-for-day exchange of labor for farming operations will not be regarded as outside employment, if it's done in accordance with the farm practices of the community and if permitted by the school.

May a farmer take training?

The law prohibits veterans from training for objectives for which they already are qualified, through prior training or experience.

So a veteran would not be permitted to take farm training if:

1. He has been successfully operating a farm similar in character to that for which the farm training course is designed to qualify him.

2. He previously had attended a school that offered a course similar to the one he's applying for.

3. He has been employed as a teacher of similar subject matter.

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The rate for advertising in this department is 30 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ##, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin.

DAIRY CATTLE

BUY your vaccinated dairy cows, heifers and calves direct from the farmers where quality prevails. GEO. E. SWANSON, Rice Lake, Wisconsin. Phone 944-R. 12-7

ARRIVING weekly from northern Wisconsin, choice Holstein springing heifers and cows. Satisfaction guaranteed. WILLIAM CLOW, Plainfield, Illinois. Telephone 7-5232 or 7-5236. 12-8

ATTENTION dairymen and cattle dealers. We can furnish you Holstein heifers to freshen this fall. Cows of all breeds. Let us know your needs. We can supply them. BOTTEMA FARMS, Bridgeport, Ind. Plainfield 8266. 20-*

KENYON Brothers Farm serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls, T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone Elgin 1818. 1-*

KEATING Brothers Farm offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone 414. 14-*

LARGE selection of Holstein and Guernsey springer heifers; also younger heifers and young springer cows. CHESTER FROBERG, Valparaiso, Indiana. 17-*

HOLSTEINS and Guernseys—Large selection of choice springers and fresh cows and heifers. TB and Bang's tested. STANLEY BURNIDGE & SON, "Grand Hotel for Dairy Cattle," Elgin, Illinois. (Hotel accommodations). Established 1916. Also good selection at Claremore, Okla., Branch—Phone: Claremore 116. 1-24

REGISTERED Holstein calves. D. L. CAVEY, Elkhorn, Wisconsin. 11-*

NORTHERN dairy cattle direct from farmer-breeders. Fieldmen available. Orders filled. T.B. and Bang's tested. BARRON COOP. DAIRY CATTLE SALES ASS'N, Glen Krenbuhl, Mgr., Barron, Wisconsin. 22-*

REGISTERED—Guernsey calves. K. V. FARM, Elkhorn, Wisconsin. 11-*

REGISTERED Holstein cows, heifers. Certified, Accredited. PAUL VAN CLEVE, Littlestown, Pennsylvania. 3-*

CHOICE Holstein and Guernsey dairy cows and heifers. Delivered on approval. Some vaccinated. JAMES E. WELCH, Rt#1, Mukwonago, Wisconsin. 2-*

HOLSTEIN cows and heifers with production, type and size from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

YOU select twelve head from forty-six registered Holsteins. H.I.R. and D.H.I.A. tested. TB negative. Bang's certified, calfhood vaccinated. VINCENT JESSE, Barron, Wisconsin.

REGISTERED Holstein calves and springer heifers. W. STRAUSS, Watertown, Wisconsin.

FOR Sale: Entire herd of registered Jerseys—10 cows, 6 heifers, 2 bulls. Sybil Design Etta Breeding. Thirty-five years of breeding and selection for the best in this herd. JOHN MOELLER, Route 7, Greensburg, Indiana.

CENTRAL Wisconsin Dairy Cattle Breeder Sales Coop., where you find type and production records in Holstein, Guernsey and Brown Swiss. MIKE ALBRECHT, Auburndale, Wis.

HIGH grade Brown Swiss herd for sale. EMIL BECKER, Montevideo, Minnesota.

REGISTERED Holsteins, Guernseys, and Brown Swiss. All ages. J. M. McFARLAND, Watertown, Wisconsin.

BUYERS—An opportunity to buy on the farms these cattle are raised on. You decide on your purchases. Not a sale barn agency. Our fieldmen cover 6 counties, northern Wisconsin. DR. HARRY T. LARSON, Ashland, Wisconsin.

REGISTERED Ayrshire and Holstein cows and heifers. Vaccinated, Accredited. Five hundred herds to select from. PEARSON BROS., Avonsyde Farms, Waterdown, Ontario, Can. 6-*

GUERNSEY cows and heifers. HERBERT CLAUSING, Cedarburg, Wisconsin. 14-2

CLEAR View Farm—For 21 years Iowa's Reliable Dairy Cattle Brokers. Choice Minnesota, Wisconsin and Iowa Holsteins. CLEAR VIEW FARM, phone 5-2651, Blairsburg, Iowa. 14-*

NORTHERN dairy cattle. Registered or select high grades. Direct from quality herds. R. F. CULLER, Amery, Wisconsin. 14-*

300 Holstein cows and heifers to choose from. Fresh, close up, and in all stages. You won't find as many good bagged and quality cattle on hand anywhere. In doubt? See for yourself. HARRY BIRGER DAIRY CATTLE CO., Rosemount, Minnesota. Phone 4521. 14-10

CHOICE Holstein and Guernsey dairy heifers from 350 to 900 pounds. Holsteins 13¼ cents per pound and Guernseys 11-12 cents per pound. All heifers sold by the pound. Also springing cows and heifers. Write or call. LINK BROTHERS, INC., Mineng, Wisconsin. 14-*

DAIRY CATTLE WANTED

WANTED to Buy: 75 head Holstein cows, 1st and 2nd calves. Must be top grade, good milkers, bred to come in about August. Must pass all tests. Write MR. HALL SMITH, Franklinton, Louisiana. 14-2

TO buy—ten high producing young Ayrshire cows or ten Guernseys. Fresh or to freshen in 30 days. F. A. CLARK, Ashton, Illinois.

CATTLE MARKERS

LARGEST, most complete line of cattle markers and livestock supplies. Free catalog. NASCO, Fort Atkinson, Wisconsin. 14-*

CATTLE MARKERS

ALUMINUM, brass and colored plastic. Send for catalog. GEO. F. CREUTZBURG & SON, Drawer 152-H, Wayne, Pennsylvania. 18-*

DAISY Cattle Markers complete with chain, brass tag for horns and neck. Write for folder. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 16-*

STOCKMEN'S SUPPLIES

MASTITIS Testers. Send for free sample and literature. LARAY MFG. CO., Pataskala, Ohio. 20-*

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

HORN weights. Made in 6 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.25 postpaid. Includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 34-*

"THE most wonderful treatment for cows I ever used," says Mrs. J. D. B., Ruffin, N. C., of Dr. Daniels' Cow Tonic. For healthy stock and increased milk production, use regularly. Send check or money order for $5.00 and receive six full 18 Oz. cans postpaid with bonus of two samples of new Mastitis Ointment, can of Udderkream and Cattle hand book. DR. DANIELS, INC., Marblehead, Massachusetts, Est. 1878. 13-apl

DAIRY EQUIPMENT

NEW 7½ gallon stainless steel milking machine pails $22.00. Vacuum pumps. WILLIAM REID CO., 2271 Clybourn, Chicago, Illinois. 12-10

IRRIGATION EQUIPMENT

IRRIGATION—Insist on genuine Auto-Lock pipe, Gorman-Rupp pumps, Buckner sprinklers. All leaders in their field. Write for free engineered proposal. The best for less. MICHIGAN ORCHARD SUPPLY CO., South Haven, Michigan. Phone 252. 6-*

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DEHYALFALFA Chops, with molasses. Baled hay. SCHWAB BROS. MILLS, INC., New Bavaria, Ohio. 9-*

FEED BAGS

WE pay highest prices for your empty cotton and burlap feed bags. Write for our quotations. THE DAYTON BAG AND BURLAP COMPANY, Dayton, Ohio. 1-*

FARM EQUIPMENT

COW stalls, pens, steel windows, hay carriers, steel fence post, post pullers. Immediate shipments. STANDARD EQUIPMENT, INC., Bel Air, Maryland. 18-*

GUARANTEED Silo-Matic silo unloaders—Also auger bunk feeders—feeds up to 300 head in 20 minutes automatically. Wet, hard packed or frozen silage no problem. 30 days free trial. Low cost. Write RAILOC CO., INC., Plainfield, Illinois. 11-*

KNIVES—Field Harvesters and Silo Fillers $4.50 each. John Deere, Case, Skyline, McCormick, Papec, New Holland. Most baler knives $5.50 each. Highest quality. Money back guarantee. Postpaid. C.O.D. add $1. AGRICULTURAL KNIVES, Baldwinsville, N. Y. 9-spl

SAVE on tractor parts—Buy direct from nation's largest combination stock of new and used parts. Free 1956 catalog. CENTRAL TRACTOR PARTS COMPANY, Des Moines, Iowa. 1-spl

CASE 28" Separator, very good, $250.00. Cutter Bar Head for late Fox Chopper, $250.00. Hay pick-up for Fox Chopper, $150.00. EICHSTAEDT IMPLEMENT CO., Waukesha, Wisconsin.

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STOP top ensilage spoilage. Hundreds of farms testing this Polyethlyn silo cover prove: You needn't waste a forkful. More than pays for itself the first year. Ideal for grass or corn silage. Special Offer, 12' and 14' silos, $9.95; 16' - $9.95; post paid. Covers and liners for pit and trench silos. Prices by request. PLASTIC SILO COVER CO., Northfield, Minnesota. 14-5

FARMS FOR SALE

208 ACRES—140 improved pastures, 50 cultivation, two fish ponds, four springs, $15,000.00 home, tenant house, two barns, dairy barn equipped. Milk base. ¼ mile highway frontage. $35,000.00, $12,000.00 cash, balance long terms. Machinery available. Reason for selling, other interest. JOHN MANUEL, Bonifay, Florida. 14-2

FOR Sale—160 acre dairy farm near Oshkosh, Wisconsin. Fully stocked. Good buildings, modern equipment. Inquire BOX 693, care Hoard's Dairyman, Fort Atkinson, Wis. 9-*

VIRGINIA dairy and cattle farms priced to sell. For details write: JOEL M. COCHRAN, Realtor, 414 East Jefferson Street, Charlottesville, Virginia. 11-6

FARMS FOR SALE

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor. John H. Hitt, Associate, Culpeper, Virginia. 12-*

220 ACRE farm, central Wisconsin, over 70 head cattle, all modern machinery, 3 tractors. Income $1800.00 per month. Price $46,500—terms. Many other farms from $3,000 up. Send for free list. VERN STEVENS, Marshfield, Wisconsin. Rep. Johnson Realty. Phone Spencer 3236. 12-4

SOUTHERN Wisconsin dairy farms, all located near Fort Atkinson, the world's dairy capital. Our lists are always complete. Write for free catalogue. LOGANWAY, INC., Wisconsin's leading farm brokers, Fort Atkinson, Wisconsin. 6-*

160 ACRE farm, near Elkhorn. Two cement silos, drive-through barn, milk house, combination hog barn and corn crib, large hen house, 2 good machinery sheds, nine room modern home, orchard. Immediate possession. Many other choice farms. THORNTON REALTY CORP., Elkhorn, Wis. Parkview 3-3260. 13-3

195 ACRE outstanding dairy farm. In buildings, soil location, best of everything. Description, pictures. JONES REALTY, Radnor, Ohio. 14-2

NORTH Carolina Dairy Farm—750 acres, 7 miles from Chapel Hill on US 15-501, 30 miles to Raleigh, 18 miles to Durham—11 room Colonial home with 2 baths, 2 powder rooms, basement—6 other dwellings with running water——milk barn for 30 cows, pipeline milking with 800 gallon bulk tank, ample barns—400 ton silo—modern poultry houses with oil fired hot water heat, capacity: 30,000 chickens—all machinery in excellent condition and ample—8.6 acres tobacco allotment—150 Holsteins; 100 registered, 60 milk cows—$6.25 milk-base production 50,000 lbs.—15 months pasture. SERVICE INSURANCE & REALTY COMPANY, Chapel Hill, N. C.

NEW Street Fall Catalog! Just out! Mailed free! Over 3000 bargains, 36 States, coast-to-coast. Farms, homes, businesses. World's largest! 86 years service, STROUT REALTY, 7-TF So. Dearborn St., Chicago 3, Illinois. 15-2

VERY outstanding nearly level heavy soil 330 acre south Barron County farm. About 250 acres fields. Modern two bath home, 96 ft. equipped barn with barn cleaner. Two big silos. 30 ft. and 50 ft. poultry houses. Grade "A" milkhouse. Other buildings. Only $200 per acre. BAKER LAND & TITLE CO., Land Specialists Since 1874, St. Croix Falls, Wisconsin.

FARMS FOR RENT

DAIRY farm, 275 acres, very productive, three barns, four silos. Can furnish Guernsey herd. Golden Guernsey market. Possession, Fall. J. L. SHOEMAKER, R. 5, Hagerstown, Maryland.

200 ACRE dairy, 80 Guernseys, 30 young stock. Syracuse shed, 50 acres Trefoil. Available 1957 to reliable party. 50-50 or milk percentage. Inspect now. HERMAN ELLER, Camillus, New York.

FOR Rent—Share basis; 220 acres western Illinois, loose housing, pipeline Grade A dairy. Available November. References. J. M. BUTLER, Abingdon, Illinois.

FOR Rent—Two modern dairy farms, 160 and 120 acres. Rolling land in high fertility. Rent on 50-50 basis beginning in 1957. PAUL KAISER, Park Blvd., Freeport, Illinois.

DAIRYMAN: 50-50 Livestock Share, purebred Guernseys. Southeastern Wisconsin. Excellent milk market. Two farms to rent separately. 200 and 350 acres respectively. March 1 occupancy. Write BOX 734, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 14-4

AGENTS WANTED

NEW Plastic Mending Tape. Just press on! Repairs clothing instantly. Lightning seller. Samples sent on trial. KRISTEE CO., Dept. 101, Akron 8, Ohio.

POSITIONS WANTED

HERD-Farm Manager, 35, married, family. Many years experience farming. Registered Holsteins. Artificial Inseminator. Want permanent position, with good home. References exchanged. BOX 736, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

MARRIED man with lifetime experience in dairy and general farming desires position as working farm manager or herdsman on progressive farm. No bad habits. References exchanged. Available January 1, 1957. Prefer Michigan or northeastern states. BOX 742, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

SALESMAN WANTED

WELL established farm dairy supply firm has excellent South and Southwest territories, now available for bulk tank farm dairy equipment and supply salesman. Car expenses, salary, and retirement plan furnished. BOX 723, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 14-*

EXPERIENCED Dairy Farm Specialty Equipment Salesman for training as factory representative. Must have experience calling on dairy farmers and dairy farm dealers. Completely new product, can be handled with allied lines. Exclusive multi-state territory with full responsibility. Excellent prospects for right man. Write, giving complete details and background. TECHNICAL INDUSTRIES, INC., 2717 S. W. 2nd Avenue, Fort Lauderdale, Florida, or phone Jackson 3-0110.

HELP WANTED

WANTED working partner, leaser, buyer for 600 acre cattle grain farm. PAUL SEIGLER, Monetta, South Carolina. 14-2

WANTED: Single man, experienced in machine and hand milking. Modern Ayrshire farm, located in Wisconsin. Top wages. References required. BOX 739, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

JOB open September 15, 1956. Wanted—Working dairyman. Good man with family large enough to milk 120 cows with 6 unit pipeline milker. Can make excellent salary. No silage handling or feeding. Must raise heifer calves. Fair four room house, electric bill paid. No water in house. Shower in barn. Will build house if satisfactory for a year. Good references required. MRS. MARGARET BASS, 1961 Harbert Avenue, Memphis, Tennessee. Telephone BR 8-1252. 15-2

HELP WANTED

WANTED—Single man experienced machine and hand milking. Modern Jersey farm located in East. Top wages. BOX 687, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 8-*

WANTED—Experienced married working herdsman for a registered Guernsey herd of fifty cows. Position open September 1st. Top wages paid to right man. New three bedroom home furnished. Farm located in Maryland. References required. BOX 740, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: Experienced, married, general farm hand for Lake County, Illinois, pure-bred livestock farm. No liquor. Must have references. Modern housing. Excellent opportunity for advancement. State age, family size and telephone number. Reply BOX 737, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

EXPERIENCED dairyman to operate two hundred and fifty cow dairy. References required. COLEMAN-STEWART FARMS, Riverside, Alabama—W. A. Coleman. 12-6

MARRIED or single. Dairy farming quality registered Holsteins. Permanent. State experience. ROOM 519, 1180 N. State St., Chicago. 13-tfd

WANTED—competent experienced supervisor for 350 cow commercial Grade A milk production unit in the southwest. No farming involved. Applicant should have good working knowledge of feeding, pipeline milking, calf raising, artificial insemination, feed purchasing and experience in handling men. Dairy college and Graham School training desirable but not essential if you have a good past record for results. Good salary and satisfactory housing furnished, including incentive bonus on earnings after services prove satisfactory. Excellent opening for right man. Give full qualifications including references, advising how soon you would be available. Write BOX 743, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 15-2

"HERDSMAN". We are in need of a herdsman for a large herd of Guerneys. Compensation is based on salary and percentage on milk produced; total running well over $4500 per year. New modern home plus usual incidentals furnished. Please give age, education and experience. BOX 741, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

BOY or elderly man, friendly, honest, to assist poultry or 60 acre farm work. Also elderly housekeeper. Best home. BROOK FARM, Hilbert, Wisconsin.

SINGLE man with initiative and interest in farming to help young man operate excellent 240 acres. Registered Holstein herd, beef, and hogs. Janesville, Wisconsin area. BOX 744, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 15-apl

AUCTIONEER SCHOOLS

LEARN auctioneering, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

LEARN auctioneering. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 8425D4, Kansas City, Missouri. 9-*

SWINE

FOR Sale—Good clean 8 to 10 week old Wisconsin feeder pigs, $9.50 each. All vet. inspected, no sale barn pigs. CLARENCE ACKER, Middleton, Wis., Phone 2569-6. 15-*

FOR Sale: Landrace bred gilts. Spring boars and gilts. Registered breeding stock. MOONLIT DALE FARM, R. 2, Box 104, Prairie du Chien, Wisconsin. 15-2

POULTRY—BABY CHICKS—DUCKS

ROCKS, Reds, $5.99; Pullets, $11.99. Leghorns, $6.85; Pullets, $12.99; Heavies, $4.99; Mixed, $2.99. FOB. BUSH HATCHERY, Clinton, Missouri. 15-5

RABBITS

RAISE Angora, New Zealand rabbits on $500 month plan. Plenty markets. Free details. WHITE'S RABBITRY, Jackson, Mich. 9-*

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

WORKING Border Collies. Imported parents. Puppies guaranteed. HOWARD McCLAIN, R6, Lima, Ohio. 2-*

SHEPHERDS, Collies, outstanding heelers, watch dogs. ZIMMERMAN FARMS, Flanagan, Ill. 5-*

BORDER Collie pups guaranteed to make excellent cow dogs. ALLAN LURVEY, Dousman, Wisconsin. 14-2

SPORTSMEN—World's Largest Kennel offers 300 Pointers, Setters, Straight Cooners, Combination Hounds, Rabbit and Squirrel Dogs, Beagles, Fox and Wolf Hounds. Trial. Prices reasonable. Catalog-gun free. SMOKEY MOUNTAIN KENNELS, Cleveland, Tenn. 15-10

FILM SERVICE

FANFOLD Fotos—Now by mail. Roll developed, 8 brilliant enlargements in album form, all for 25c coin. MAIL-PIX, Dept. H, Box 7100, Elkins Park, Pennsylvania. 9-*

TRY us once! Fast service! Top quality: 8 enlarged dated prints from your roll 25c; 12-35c. (Trial offer). Reprints 4c. Kodacolor specialists: Roll developed 90c; prints 32c each. Free mailers. WILLARD STUDIOS, Box 2353T, Cleveland, Ohio. 19-4

OF INTEREST TO WOMEN

FREE—Big new wholesale catalog! Up to 50% saving for you, family, friends on nationally-known gifts, jewelry, toys, appliances. Christmas cards, etc. Also make money selling part time! Write: EVERGREEN STUDIOS, Box 846-BC, Chicago 42, Illinois. 15-8

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

OF INTEREST TO WOMEN

BUY Wholesale Save 66 2/3%! Appliances, furniture, jewelry, toys, sporting goods, tools. Free catalogs. NATIONAL BUYERS SERVICE, Box 3336DB, San Francisco. 11-14

CASH crop. Earn easily $50-$250 spare time. No experience needed. Just show exclusive Elmira Christmas cards, gift wrappings. Samples on approval. Bonus: Free box cards, also 50% profit on first order. Hurry! ELMIRA GREETING CO., 181 Clinton, Elmira, N. Y.

FREE—"Sew It Yourself with Cotton Bags." New, free 24-page idea book for making clothing, household articles, toys and gifts from colorful cotton bags. 1956 Simplicity pattern illustrations. Send postcard to COTTON COUNCIL, Box 9906, Memphis 12, Tenn. Offer expires April 1, 1957. 13-spl

LOST ADDRESS

MR. George Askew. Please contact me concerning cattle. Have lost your address. WILLIAM CLOW, Plainfield, Illinois.

MISCELLANEOUS

NEED stationery? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-t

BILLBOOKS—Statements, Envelopes, Rubber stamps. EDDIROSE, Bronx 72, New York. Free catalog.

Sales Announcements

August 11, 1956, 11:00 a. m., D.S.T. — Brown Swiss. National Super Swiss Sale, Northampton, Massachusetts. Norman E. Magnussen, Sale Manager, Lake Mills, Wisconsin.

August 11, 1956 — Brown Swiss. Hy-Crest Goodwill Heifer Sale, Northampton, Massachusetts. Norman E. Magnussen, Sale Manager, Lake Mills, Wisconsin.

August 13, 1956, 10:00 a. m., D.S.T. — Brown Swiss. Ethan Allen Dispersal. 140 head. At the farm near Burlington, Vermont. Norman E. Magnussen, Sale Manager, Lake Mills, Wisconsin.

August 14, 1956 — Holsteins. Harvest Festival Sale, 7 miles north of Watertown, Wisconsin, on Hy. 26. Francis Darcey & Sons, Sale Managers, Watertown, Wisconsin.

August 16, 12:30 p. m.—Guernseys. Dispersal of complete Austin Frye herd, plus consignments by Floyd Nichols. At the Fryland farm, one mile north of Sparta, Wisconsin on highways 27 and 71. Farm Loan Service, Security State Bank Building, Madison, Wisconsin.

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Profitable AYRSHIRES
The Breed with Production and Type
LARGEST PRODUCERS OF 4% MILK
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greatest net returns from his cows
Write for literature or list of breeders near you
AYRSHIRE BREEDERS ASS'N, 10 Center St., Brandon, Vt.

AYRSHIRES FOR SALE—Look for our consignments at the following summer Ayrshire Sales: Va. Sale, Verona, Aug. 15; N. C. Sale, Statesville, Aug. 20; S. C. Sale, Laurens, Aug. 20; W. Va. Sale, Jackson's Mill, Sept. 11. There should be a lot of good Ayrshires at these sales. Write for information.
STRATHGLASS FARM, Box 71, Port Chester, N. Y.

THE STARTING POINT FOR DAIRY PROFITS
Choice heifer and bull calves rich in the blood of Carefree Diamond Jim, Double Approved. Also polled bull calves out of daughters and granddaughters of Diamond Jim. All calves from classified and official herd test dams. Write for pedigrees and prices.
CAREFREE FARMS
"Traditionally The Best" NEW HAVEN, IND.

REGISTERED AYRSHIRE BULLS
all ages out of record dams, imported breeding. Reasonable. Write:
GREENFIELD FARMS, Box 63, Route 2, Mukwonago, Wisconsin.

LONG LANE AYRSHIRES
Breeding Ayrshires For Many Years Has Given Us A Knowledge And Know-How Of Our Bloodlines That Can Guarantee You THE VERY MOST FOR YOUR HERD SIRE DOLLAR!
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LONG LANE FARM, Marine City, Michigan

GUERNSEYS

FOREMOST PREDICTION
Voted 3rd most influential sire of the Guernsey breed. Proved one of the greatest production transmitting sires through his sons and grandsons. Our herd is linebred to Foremost Prediction.
Breeding animals of both sexes available.
McDONALD FARMS
CORTLAND, NEW YORK

FOR SALE

BULL BORN JULY, 1955
Dam has 11957-593-Sr2C-2x milking. From our Class Leading Lenda cow family. Sired by McDonald Farms Tarbell 67 AR daughters, son of Douglaston Lady Augusta Excellent 11 PR progeny. A choice individual. Also top bred heifers due August, September and October.
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Smithville Flats, New York

HIGH PRODUCTION PLUS THE CONSTITUTION AND CONFORMATION TO MAINTAIN IT
We offer the finest selected bull calves sired by Imp. Petronnerie Dandy, Langwater Royalton and Fairlawn Courteous Prince and out of Strong proven cow families. AR & D.H.I.A. records. Inquiries are invited, so are you.
Liberty Bell Farm
Milwaukee Road, Libertyville, Illinois

A BULL OF YOUR OWN
FOR UNIFORMITY IN YOUR HERD. Select a good typy young bull sired by one of our fine quality sires—Langwater Rocket, Ideal Narcissa's Radiant or Fairlawn K. Princeton. They will add quality to your herd and they are priced right. See them at the farm. Highway #96—between Stillwater and White Bear, Minn.
SANITARY FARM DAIRIES, INC.
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Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.
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PUREBRED
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Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.
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ESKDALE FARMS Registered
GUERNSEYS
PROMISING BULL CALVES
By proven bulls and out of high producing cow families. Priced reasonable.
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NEED A GOOD GUERNSEY SIRE?
If you are looking for a young sire with good type and production back of him, write for our sale list. We have youngsters for sale at reasonable prices, out of very good female families and sired by Leeside Dairyman, McDonald Farms Mister Dairyman, Dairyman Favorite, or Dairyman Dividend. You will save money if you buy a well bred youngster and raise it yourself.
Write Us Today
HOARD'S DAIRYMAN FARM
FORT ATKINSON, WIS.

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Guernseys . . . Registered and Grade Females. All Ages . . . ALSO BULLS. Free Service to Buyers or Bought on Order . . . Fort Atkinson, Wisconsin.

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Offering select Guernsey bull calves up to serviceable age. Sired by McDonald Farms Pre Melvin, an outstanding type and production Sire. Dams are daughters of the great proved high production Sire, Flying Horse Masters Royal, large, typy, good uddered cows with records up to over 10,000 lbs. milk, 550 fat as 2-yr.-olds, 305—3x milking. Heifer calves for club work for Sale, the blue ribbon kind. The Right kind at the Right price. Write or come to GRANDVU FARMS, Wrightstown, Wisconsin.

GUERNSEYS
Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. See Burlingham, fieldman, at your service. WAUKESHA COUNTY GUERNSEY BREEDERS' ASS'N, Waukesha, Wisconsin.

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FRYLAND GUERNSEYS
Mr. and Mrs. Austin P. Frye owners
With added guest consignments from Coulee Country Farm, Floyd L. Nichols owner.
THURSDAY, AUGUST 16, 1956
Time — 12:30 P.M. Sharp
LOCATION — AT THE FRYLAND FARM
1 mile North of Sparta on Highway No. 27 & 71
Lunch will be served on the grounds
CATTLE — 41 Registered Head — 9 Grades
19 registered cows, 6 grade cows, two herd bulls, 1 service age bull, 7 bred heifers, 5 open heifers, 7 heifer calves, 3 bull calves.
Green Meadow and Cherub breeding.
Sires used during the past 8 years include:
1. Langvalley King Sparta 491285—Sire: Out of Formost Nanita—Jr. 2 Class Leader. Dam: Chedco Enchantress—Sold for $2000.00.
2. Lynbrook Anna's Philosopher 413648—7 nearest dams averaged 800 B.F. Sire: Argilla Philosopher—Sold for $9,200.00. Dam: Lynbrook Cherry Anna—739 B.F. Sr. 4.Ot. G+.
3. Lynbrook Royal Prepared 458421—14 nearest dams average 825 B.F. Sire: Lynbrook Prince Royal—7 nearest dams ave. 840 B.F. Dam: Lynbrook Cherry Precept—616 B.F. Jr. 2 (3 quarters) Classified EX 49 & 50.
4. Hominy Hill Adventure 412672—Mat. Brother to Pansy's Patsy of Meadow Lane EX. Pat. Brother to Hominy Hill Moonlight—7 times EX. Sire: Riegeldale Coronation King. Dam: Polly's Pansy of Meadow Lane—V.G.—16132—760 B Class Leader.
5. Coulee Country Resolute 502278—Sire: Fairlawn Hornet's Resolute—Sold for $8000.00. Dam: Jethros Gold Dust—Good plus in 47. 14461 - 776 - 13 - 365 - 2X - HIR - Class Leader.
DHIA, HIR, and AR Records. The herd average of the Fryland Farm for the past six years is 473 lbs. of butterfat. Featuring big 500 lb. B.F. cows with good udders. All records made on 2X a day milking.
Sale managed by Farm Loan Service of Madison
Auctioneers: Elvin Kroner, Winona, Minn., Robert Brandau, Wilton, Wis.
Harrison Wallace, Sales Representative
F. L. Nichols, Pedigrees
Ring Man—Wayne Huntzicker, Cashton, Wis.
For catalogs write Austin P. Frye, Route No. 1, Sparta, Wis.
H. M. Wallace, Norwalk, Wis., Farm Loan Service, Inc., Security State Bank Bldg., Madison, Wis.

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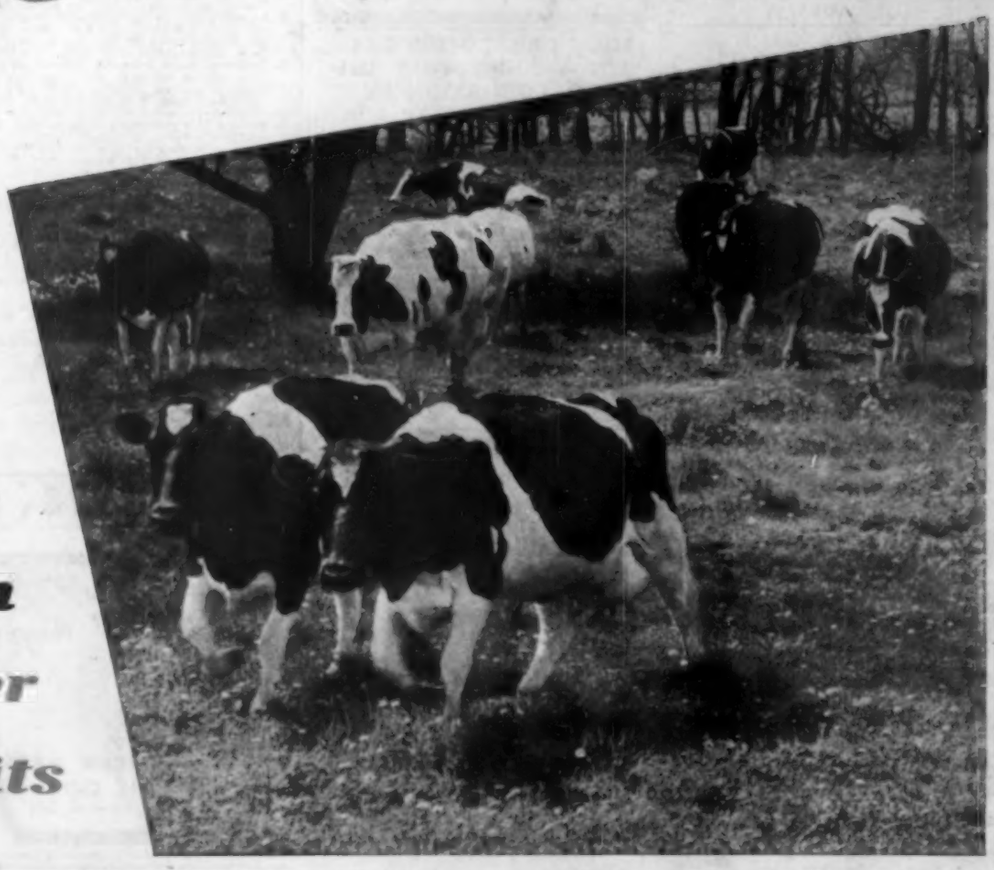

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Starting at 11:30 A. M.

There are 53 head in the herd

27 cows of unusual type and capacity, eleven bred heifers, the balance yearlings and calves. The bred heifers and many of the cows are due in late summer and early fall. The herd throughout has remarkable type. A 404 lb. fat average was established in 1955, which included nine two-year-olds. Tweedy Premier Joe, a show ring celebrity, will sell with 23 of his daughters. Joe is by Green Meadows Rag Apple, a preferred sire and a consistent show ring winner in his own right. He is by Green Meadows Constellation. Eleven of his daughters will sell.

There are three V.G. cows selling, eleven Good Plus and the balance Good. The herd is vaccinated and negative. This sale offers an unusual opportunity to purchase not only foundation animals, but animals with show ring potentials.

FRANCIS DARCEY & SONS, Sale Managers WATERTOWN, WIS.

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He is from a great "dairy" cow, an 830 lb. Fat, 4%, Very Good, with over 100,000 lbs. Milk; and from a Very Good, Silver Medal Type sire. "Art's" daughters, none below Good in any breakdown, even as heifers, promise him further honors as sufficient finish Herd Test records.

No "Art" sons available at the moment, but several high 600 lb. and 700 lb. dams carrying his service are due shortly, if you would wish one reserved.

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Wisconsin Admiral Burke Lad's transmission of high production and good type is inherited by his sons and grandsons. Regal shows an average increase on 112 pairs of 246 lbs. milk and 25 lbs. fat. Pabst Fobes Burke Ex. is a grandson of Regal from a Burke dam. He has 50% Burke blood.

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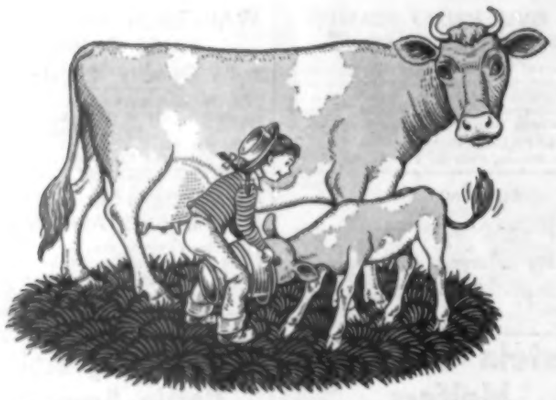

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Some questions on bloat

You can prevent a great percentage of possible bloat cases by following these tips.

by E. A. Woelffer, D.V.M.

THE pasture bloat season is here. Since bloat is such a lively and important health topic, we will try to answer some of the questions that come to us from time to time.

Bloats are sometimes classified in several different ways, such as acute and chronic. When gas accumulates in the rumen or paunch rather quickly and severely, it is referred to as acute bloat.

In acute bloat, emergency treatment must usually be given or death occurs rather quickly.

When there is chronic bloat, the accumulation of gas is usually not so severe and the condition recurs frequently. There is also a comparison between so-called foamy bloat and simple bloat. In foamy bloat, pockets of gas intersperse the contents of the rumen whereas in simple bloat free gas largely collects in the upper portions of the rumen.

Besides the pasture bloats, abnormal accumulations of gases in conjunction with certain digestive disturbances also occur. These are caused by overfeeding of either roughages or grain or from eating indigestible substances or damaged food. Bloating of this kind can occur at almost anytime of the year.

The bloating we should be concerned with at this time is that which occurs when animals are first turned out on legume pastures or following heavy grazing on fields where the majority of plants are legumes.

What causes bloat?

In the normal process of fermentation and digestion of the rumen, gases are formed more or less continuously. Some of this gas is absorbed through the wall of the paunch. The larger portion, however, is "belched" out through the rumen opening and the mouth.

If the opening is obstructed so that the gas cannot readily escape, it accumulates and builds up a pressure within the paunch. The causes of gas obstruction are not always accurately understood.

Why do some animals bloat and others do not?

The best producers in a herd or the animals that put on the greatest gains are often the first to bloat. An explanation is that these animals are usually more hearty eaters. Because they eat more and are more likely to overload their stomachs, this may help to interfere with the escape of gas. When the food they eat consists of legumes, there is greater interference with the escape of gas.

We lost three cows on a good Ladino clover pasture last year. Would it be advisable to discontinue pasturing Ladino?

It is true that grazing livestock on fields that consist primarily of legumes can be a dangerous practice. However, the practice should not be eliminated because of the great economic importance of legumes in livestock management. The danger can be greatly lessened if certain practices are followed.

Since bloating usually occurs on pastures that contain less than 50 per cent grasses, it is important when feeding new stands that the mixture is not too heavy in clovers. Talk with your county agent about a suitable seed mixture in your area.

If the Ladino crop is again proportionately high in clover this year, it may be more advisable to cut enough each day and feed it in the barn or lot as fresh feed rather than pasture it.

If this isn't feasible, then withhold the animals until the plants have reached the full bloom stage. In addition, keep good palatable hay in the feed rack in the same pasture. The occurrence of bloat is greatest during or following the periods of most rapid growth.

Can bloating be prevented?

Not entirely. This is because all the facts are not known. In addition to those already mentioned, here are a few suggestions that will help minimize the pasture bloat problem.

1. Start animals in legume pasture gradually. An hour or so the first day, a little longer on each succeeding day.

2. A gradual change in feeding is usually better than a sudden shift. It gives the cow a better chance to get used to the change.

3. Hungry or greedy cows are more sensitive to bloat. Because of this, keep them out of heavy legume pastures or see to it that they get their fill of dry roughage before they are turned out.

4. Keep cows off legume pastures during or following warm, rainy weather particularly when the plants are short and rapid growth is taking place.

Recently veterinarians have employed certain types of medicinal products as bloat preventatives. Reported results are encouraging. More experience with their use is necessary, however.

What shall I do when bloat occurs?

If severe or acute bloat occurs, immediate action is usually necessary to save the animal. It is important to call your veterinarian at once. There are times when the veterinarian cannot arrive soon enough. In that event, temporary relief can be obtained by placing a sawed off broomstick handle in the cow's mouth. It is held in position with a rope or rope halter.

The cow will champ on the wooden bit which stimulates belching. The animal is in no serious danger if she continues to belch gas from the rumen.

If possible, raise the front feet a little higher than the rear feet, thereby making it easier for the gas to escape. Moving the animal about may also be helpful.

If it is too late for this procedure, it may be advisable to puncture the skin and rumen with a trocar and canula or jackknife. The latter treatment should not be used unless absolutely necessary since subsequent infection of the wound may occur. If neglected, this may lead to peritonitis and death.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Barbed wire cuts

Loose barbed wire in pastures and poor fences which invite cattle to break through often result in serious wire cuts. If you must use barbed wire fencing for lanes, be sure not to make them too narrow. Wire cuts often result if lanes are too narrow or areas too small.

Injury from wire cuts can occur on almost any part of the body. Usually the most troublesome are those on the teats or udder.

Some small cuts will heal without any particular attention. It is best, however, to give first aid treatment to all injuries, regardless of how harmless they appear.

Some small wounds require cleansing and possibly some trimming of tissues. It may be advisable to bandage the wound. Often a small gaping wound can be held together with one or two small strips of tape.

Suppose you have a teat with a small wound which is covered with dirt and blood. Soak the teat in warm, mild creoline or epsom salt solution. It is best to have the water as warm as the hand can stand. Soak the teat for 10 or 15 minutes.

Using a piece of cotton or a clean strainer pad, gently wash the wound by dabbing it on the freshly-cut tissue. Do not rub the wound. Apply a suitable non-irritating antiseptic, ointment, or healing oil. Bandage if necessary.

Larger, deeper wounds often require special attention, depending upon location, drainage, and tissues involved. Some require suturing, such as cuts into the teat canal or cistern of the udder.

Best results from suturing injured teat canals are obtained when the operation is done soon after the accident. It is important, therefore, to call your veterinarian early. The same is true when excessive bleeding occurs.

Tetanus antitoxin injections are generally indicated when deep stab wounds are present, particularly where tetanus germs have been known to exist.

In other cases, systemic treatment is indicated to combat virulent infections that enter body tissues from wounds. In screw worm areas, extra precautions are necessary.

IS HERNIA INHERITED?

I recently had my local veterinarian examine a swollen navel on a 4-month-old heifer. He said the swelling was a hernia and advised me to ship the calf, saying the condition was hereditary and the animal probably would have offspring with the same condition.

As I am raising a bull for a herd sire out of the same cow (now about 16 months of age), I would like more information regarding hernias.

The bull has no symptoms of hernia, but I wouldn't want to keep him longer if he would carry this weakness to his offspring.

Will you please advise me.

Taneytown, Maryland W. L. T.

There is no scientific proof that the occurrence of enlarged navel is transmitted but there is ample evidence that it is an inherited factor. We think it is safe to say if the bull is used, you should expect the occurrence of hernias in some of his offspring.

QUESTIONS ON BANG'S

When a cow is tested for Bang's a few weeks before calving and is said to have Bang's, could it be possible that she would not have Bang's if she were retested a few months later?

Is there any cure for Bang's once a cow has it?

Where does the germ come from the land, river, or just what? Is it always going to be present?

Is it possible for one cow to infect a whole herd? If so, how?

Are beef cattle also tested for Bang's or is it just dairy cattle?

Litchfield, Minnesota M. S.

If a cow is tested for Bang's (brucellosis) a few weeks before calving and she shows positive evidence of the disease, a similar reaction to the blood test can be expected if taken a few months later. However, it is true that reactions vary from time to time, particularly near the calving period. These variations occur mostly in the doubtful dilutions.

There is no cure for brucellosis once the cow has acquired the disease. The brucellosis germ is spread from a diseased animal to a susceptible animal. It is possible for one cow to infect a whole herd, although this would not be expected to occur very often.

The most dangerous period is at calving time. The fetal membranes (afterbirth) and the fluids from calving are teeming with thousands of germs. If susceptible, and cows lick or drink even a small amount of this material, or if some of it is spread from the feet of animals or the shoes of anyone working around the cows onto hay or grain, the cows eating it are likely to become infected. Rarely will a cow spread the infection through her milk.

Beef cattle become infected and should be tested just as dairy cattle to control the disease.

COW HAS DEAD CALVES

I have a cow that has had four calves. The first two were alive; the other two were born dead. She carried them to full time.

Please tell me the trouble.

Magnolia, Mississippi H. S. C.

We quite frequently come across cows with histories similar to the one you describe. In the absence of infection or wholesale destruction of the maternal caruncles of the uterus, a cause for the production of dead calves at term has not been determined. Possibly there is an interference or derangement of the hormone-producing mechanisms which causes an imbalance of hormone secretion.

It is always important to rule out brucellosis and other infections that sometimes cause abortions.

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